

# FLIGHT

*The*  
AIRCRAFT ENGINEER  
AND AIRSHIPS

First Aeronautical Weekly in the World. Founded January, 1909

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice and Progress of Aerial Locomotion and Transport

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## DIARY OF CURRENT AND FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in this list:—

- 1934.
- Apr. 13. "Mapping the Arctic Air Route." Lecture by A. Courtauld before Imperial Overseas Legion, at Kingsway Hall, 8 p.m.
- Apr. 16, 23, 30. "Gyroscopes." Series of Lectures by Prof. J. G. Gray before Royal Society of Arts.
- Apr. 19. "The Houston-Mount Everest Expedition." Lecture by Air Commodore P. F. M. Fellowes, before R.Ae.S.
- Apr. 22. Northamptonshire Ae.C. Tea Party and Opening of New Club Buildings.
- Apr. 23-27. 35th International Aviation Conference, Geneva.
- Apr. 26. "Landing in Fog." Lecture by Dr. Rud Stussel before R.Ae.S.
- Apr. 27-May 6. International Aero Show, Geneva.
- May 10. "Speed and the Future of Commercial Aircraft." Lecture by M. Louis Breguet before R.Ae.S.
- May 17-June 2. Royal Tournament, Olympia.
- May 21. Air Display, Loughton Aerodrome, Essex.
- May 24. Empire Air Day.
- May 27. Deutsch de la Meurthe Cup.
- May 31. "Stalling." Wilbur Wright Memorial Lecture, by Prof. B. Melvill Jones, before R.Ae.S.
- June 1. Entries close at 12 noon for London-Melbourne Race.
- June 2. Brooklands Air Race Meeting.
- June 3. London Aeroplane Club Garden Party, Hatfield.
- June 9. Reading Ae.C. Annual "At Home."
- June 16. R.A.F. Reserve Flying Club Annual Flying Display, Hatfield.
- June 23. Lancashire Ae.C. Air Display, Woodford.
- June 23. Henly Rally, Heston Airport.
- June 30. Royal Air Force Display, Hendon.
- July 3-9. 4th International Congress for Applied Mechanics, Cambridge.
- July 7. Opening of Leicester Airport.
- July 8. French International 12-Hours Reliability Trial.
- July 13-14. King's Cup Race. Start and finish at Hatfield.

## THE FUTURE OF "FLIGHT"

### ITS NEW OWNERSHIP

THE announcement of a change in ownership of this journal in no way involves any drastic change of policy. For some years past FLIGHT has been produced in harmony with Iliffe & Sons, Ltd., proprietors of *The Autocar*, *The Motor Cycle*, and associated journals, this culminating in the transfer as the outcome of a friendly understanding some six years ago. The aim of the new proprietors will be to continue and expand the policy this journal has consistently followed since it was founded twenty-five years ago, but with the organisation and resources of Iliffe & Sons, Ltd., it will be possible to develop FLIGHT to even higher realms. The highly respected staff of the journal are continuing under the new ægis, and very soon will be installed in modern offices at Dorset House, Stamford Street, London, S.E.1.

Although Mr. Spooner regards his life's work as being accomplished with the successful establishment of the first aeronautical weekly in the world, and, as he is now in his 79th year, he proposes to enjoy his retirement, and has consented to act in an advisory capacity when called upon. Mr. C. M. Poulsen, the acting Editor, who is also Editor of the monthly technical supplement *The Aircraft Engineer*, will continue in that dual capacity, ably assisted by those loyal members of the editorial staff, including artists, photographers and special contributors, all of whom possess invaluable experience in the aviation world, and have been connected with FLIGHT for many years past.

Thus the future of this journal is doubly assured under its new proprietorship, and the change arrives at a moment when aviation is developing with great rapidity in every country, and its immense importance to the future of the world is becoming generally recognised.

# FLIGHT

## ITS EDITOR AND ITS FUTURE

By The Staff



ON January 3, 1930, the issue of *FLIGHT* took the form of a birthday number to celebrate its 21 years of publication. Messages of congratulation were received in great numbers from all over the world, and the message not least appreciated by the Editor and Staff was one from Sir Edward M. Iliffe, C.B.E., M.P. (now Lord Iliffe), which ran:—

“Heartiest congratulations to *FLIGHT* upon the attainment of its 21st anniversary, and to its founder, my friend Stanley Spooner, upon his wonderful foresight and confidence in the future of aviation. It must have been a very uphill fight in the early days. Only pioneers can appreciate the disappointments and set-backs attendant upon establishing a journal devoted to a new industry. *FLIGHT* has remained steadfast in its beliefs, and to-day can reflect with satisfaction upon the invaluable spade work it has performed in the national interest. . . . If Sir Charles Wakefield can be termed the patron saint of aviation, Mr. Stanley Spooner must be ascribed not only its heralding angel, but its mentor and guiding star.”

To-day, four years after the receipt of that message, we announce that Mr. Stanley Spooner has transferred the proprietorship of *FLIGHT* to the firm of Iliffe & Sons, Ltd., of which his old friend, Lord Iliffe, is the head. It is an important step in the history of aeronautical journalism, and we feel sure that at this moment the thoughts of our readers will turn, as certainly the thoughts of the Staff turn, to Mr. Stanley Spooner, the pilot who has steered the ship so resolutely for 25 years.

This, however, is not perhaps the occasion for dwelling in detail on Mr. Spooner's services. Our readers will also think of the present and future of *FLIGHT*. We may assure them at once that the position of the paper is stronger than ever. In its early days it fought its way to success. Now, that success is consolidated by the linking of its fortunes to the

great resources of the house of Iliffe. Speaking for the Staff of the paper, we unhesitatingly say that, as the time has now come for our old and honoured chief to rest on his laurels, there are no hands to which we should more gladly see the tiller entrusted than those of the great firm whose head has been for so long the friend and admirer of Mr. Spooner and of *FLIGHT*.

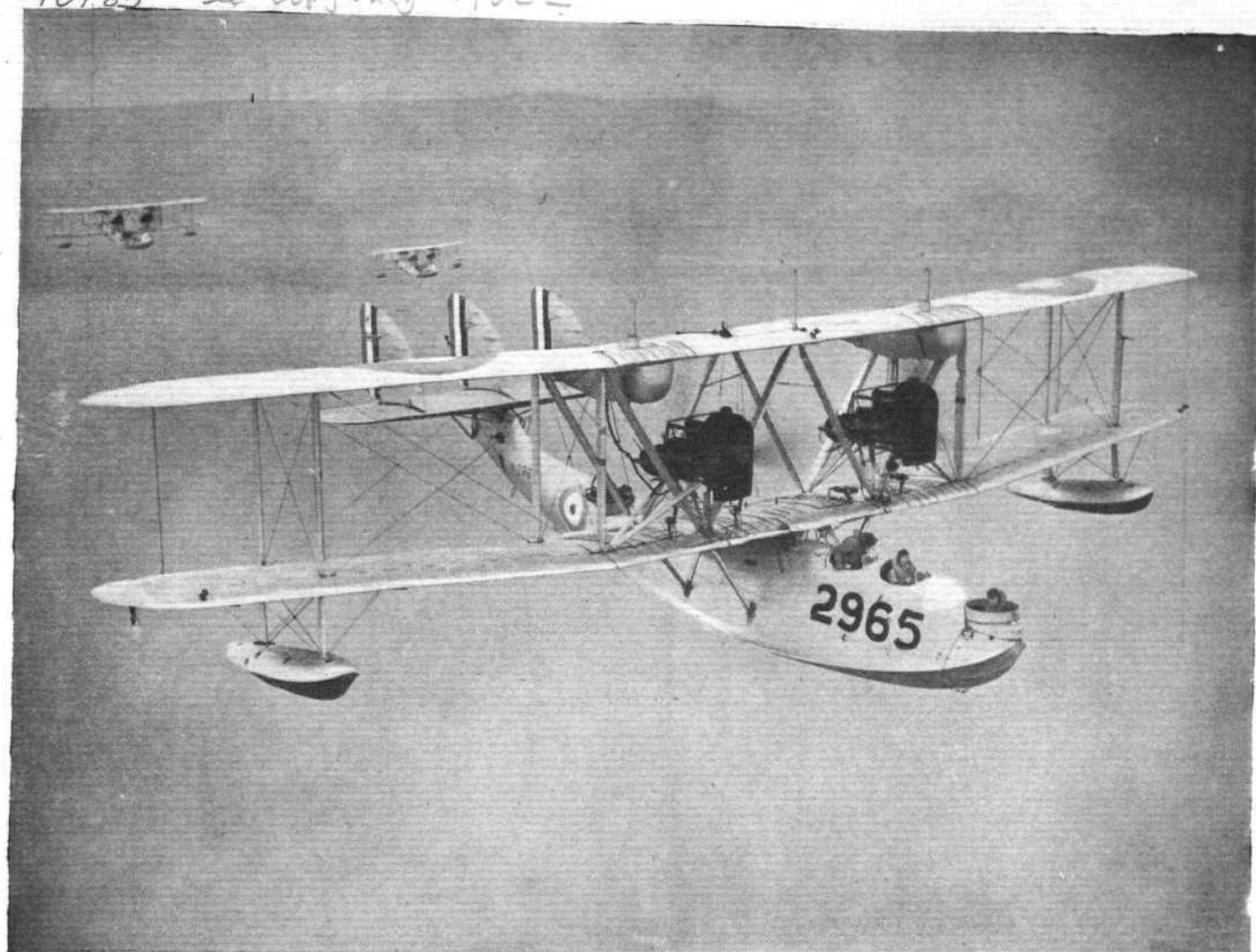
Our readers may rest assured that there will be no important change in the consistent policy of *FLIGHT*. The whole of the present Staff retain their positions and will carry on the traditions which have made *FLIGHT* what it is. The only change which may be expected will be improvements. With greater resources behind it, *FLIGHT* looks forward to providing its readers with something even better than they have had in the past.

Even since our 21st birthday issue of January 3, 1930, aeronautics have made remarkable strides forward in all directions. Research never stands still, and each year aeroplanes and engines are better than they were the year before. Each year commercial air lines grow in number and in mileage. Each year more of the public take to the air as a normal means of travel. Each year the flying clubs turn out more active pilots. Each year knowledge of the air and interest in aeronautics spread more and more widely among the people. Each year the Royal Air Force and the Auxiliary Air Force raise higher and higher the standard of efficiency. Flying in all its aspects is now a very great subject, and the task of studying it, recording its progress, and commenting on its developments grows ever more exacting. *FLIGHT*, we believe, has not failed in the past to deal worthily with this great aspect of modern life. Heartened by the support and approbation of its readers, and fortified by the knowledge of great resources behind it, *FLIGHT* embarks cheerfully and confidently on the next stage of its career.



COMMERCIAL AND PRIVATE ENTERPRISE: Imperial Airways' Armstrong-Whitworth airliner *Aurora* (pilot, Capt. Eggesfield) alighting on the Kuala Lumpur Flying Club's aerodrome, with the homeward mail, on March 11. This aerodrome is now one of the halting places on the Imperial air route.



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THE SQUADRON LEADER: Sqd. Ldr. C. G. Wigglesworth, A.F.C., commanding No. 201 (Flying Boat) Squadron, leading a formation of Supermarine "Southampton" (2 Napier "Lions") over the Solent.  
(FLIGHT Photo.)

## No. 201 (FLYING BOAT) SQUADRON

By MAJOR F. A. de V. ROBERTSON, V.D.



CALSHOT BASE was the subject of a recent article in FLIGHT, but space did not allow us to deal in that article with No. 201 (Flying Boat) Squadron, which is not the

least important unit stationed at Calshot. We propose now to make good that deficiency. In truth, this squadron deserves an article to itself, for it is the oldest of our flying boat units, has a record dating from the war, and has since done some of the finest work of any done in Home waters.

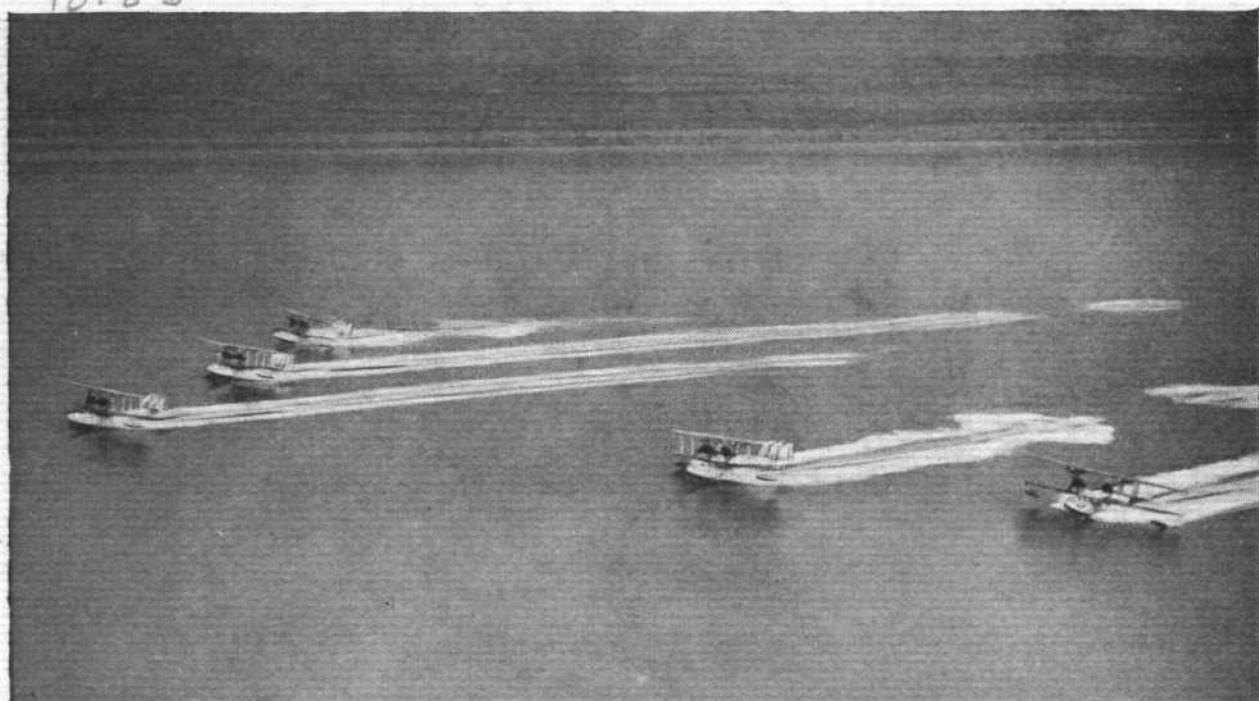
Flying boat work stands by itself among the various functions of the Royal Air Force. At present it is classed rather indefinitely under the heading of Coast Defence, sharing that designation with the squadrons of torpedo-bombers. All the coast defence squadrons, when stationed in this country, come under the Coastal Area, but it so happens that at the present one of the torpedo-bomber squadrons, No. 36, is stationed at Singapore, and the other, No. 100, has been sent out there from Donibristle. Three flying boat squadrons are overseas, and four are in this country. The work of flying boat squadrons has not been accurately defined, perhaps because no one knows the extent to which it may develop. These squadrons seem to hold more possibilities of expansion into spheres of usefulness not hitherto reached than can be said of any other class of R.A.F. unit. In fact, we do not yet know how much the flying boat squadrons may ultimately achieve, and so we are wise to regard their functions as elastic, and not to tie them down rigidly. No manual says that

this can be done by flying boats, but that cannot be done. Their possibilities seem to be unlimited.

The present title of this unit links it up with the glorious traditions of No. 1 Squadron, R.N.A.S., which was formed at Gosport in October, 1914. It was a fighter squadron and served at many places on the Western Front. On the formation of the Royal Air Force on April 1, 1918, this unit was renumbered 201. It was disbanded at Lakedown on December 31, 1919. The Calshot unit, however, had a continuous existence before it received the number 201. In 1922 some F.5 boats of No. 230 Squadron were transferred from Felixstowe to Calshot and were amalgamated with the Naval Co-operation Flight which was already there. This new combined unit kept the designation No. 230 Squadron, and it is interesting to recall that its commanding officer was Sqd. Ldr. W. B. Callaway, who now, as a Group Captain, commands Calshot Base. Both the units which were thus amalgamated had done good work in the war. The flying boats at Felixstowe had had a busy time over the North Sea, while the flight at Calshot had been engaged on anti-submarine patrol. The new squadron was given the task of naval co-operation with the Portsmouth submarine flotilla at Portland, as well as exercises with the Atlantic Fleet. Before the end of 1922 it was renamed No. 480 Flight. In January, 1929, when all the flying boat units were given the title of squadron instead of flight, this unit was called No. 201 (Flying Boat) Squadron.

In 1925 the squadron at last got rid of its old F.5 boats, and in place of them received the then new "South-

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LANDING IN FORMATION : No. 201 (F.B.) Squadron displays its smartness in alighting. (FLIGHT Photo.)

ampton." This production of the Supermarine firm was then the finest aircraft in the world, and if it had been desired to win world's records for Great Britain, the "Southampton" would probably have established quite a number for lifting weights and carrying them at certain speeds and to certain heights. It was, and of course still is, a remarkably seaworthy boat for its size. The first "Southamptons" were built of wood in the special Supermarine way, which absorbed landing shocks through the resilient nature of the structure. Afterwards metal boats were substituted, which, of course, were rigid, but they scored immensely by not soaking up water and so increasing their weight.

In September, 1925, the squadron put their new craft to a useful test by making a three weeks' cruise in the Irish Sea, the success of which was somewhat of a revelation. People began to see that "Southamptons" could undertake long cruises, and look after themselves very well between refuelling stations. This was presently demonstrated when what is now No. 205 (F.B.) Squadron made

its great tour from Mount Batten to Australia, right round that continent, and back to Singapore, to Borneo, Hong Kong and back again to Singapore, where it is now stationed.

From October to March each year the squadron is engaged in individual training of its personnel. All the pilots have, of course, been through the course with the Seaplane Training Squadron at Calshot, which was described in our article on Calshot Base, but all squadrons in the R.A.F. put their personnel through some additional individual training during the winter months. In April, May and June the squadron carries on with its normal work, as described below. In July it may be chosen to go on a foreign cruise. Each summer one F.B. squadron goes on such a cruise. In 1933 No. 204 F.B. Squadron went on a cruise in the Baltic, while No. 201 went to Londonderry to be present to receive the Italian squadrons under General (now Marshal) Balbo which were on their way to cross the Atlantic to America. No attempt was made to fly out

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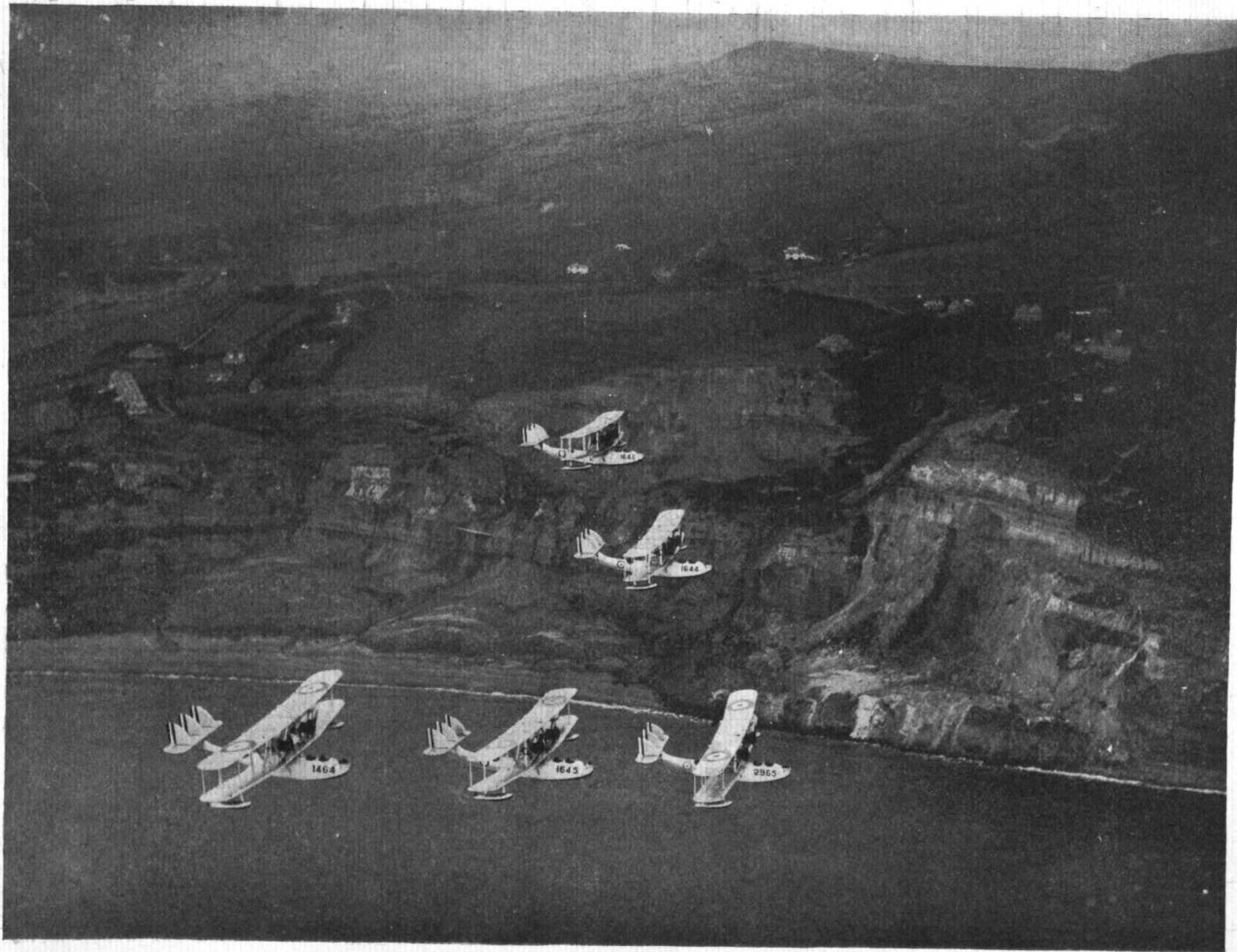


OVER THE BEAULIEU RIVER : Airmen alone can see the number of S loops made by this very tidal river as it makes its way through the New Forest. (FLIGHT Photo.)



101785

BY THE VENTNOR  
LANDSLIP: Five  
Supermarine "South-  
ampton" of No. 201  
(Flying Boat) Squad-  
ron in excellent for-  
mation following the  
steep southern coast  
of the Isle of Wight.  
(FLIGHT Photo.)

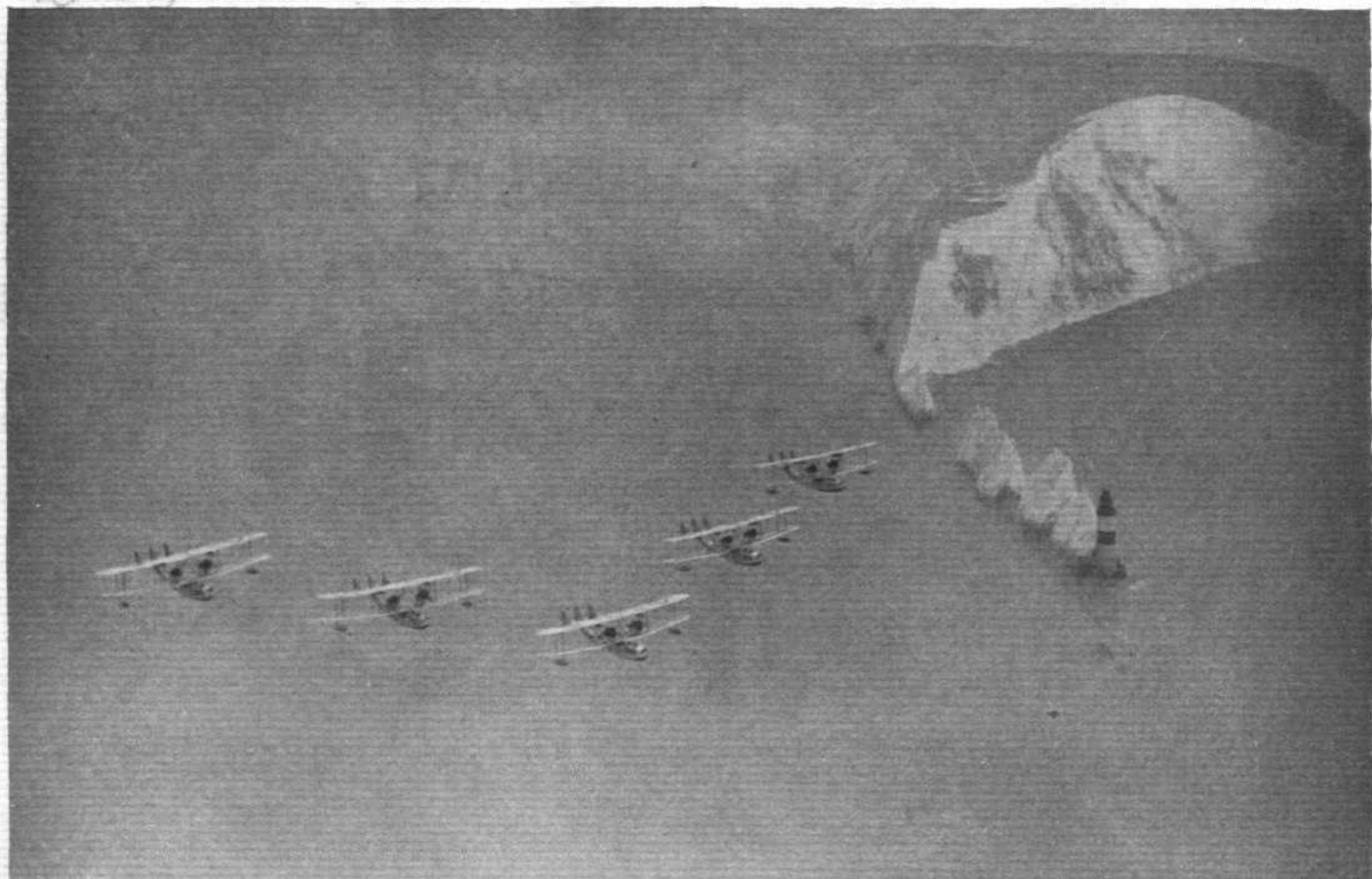
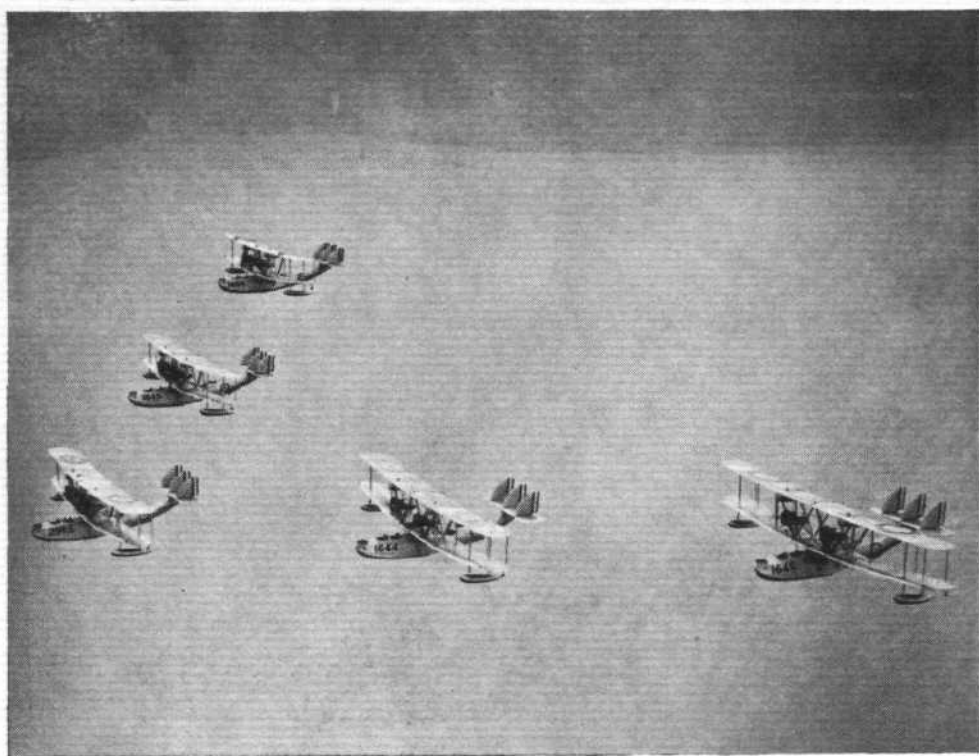


FLIGHT, APRIL 12, 1934

to meet the Italians, partly because there were such a lot of the latter in the air, and partly because the "Southamptons" are no longer the most advanced type of seaplane in the world, and could not keep up with the Savoia-Marchettis. So the squadron remained at moorings in the river beside the town, though their presence there was a token of British hospitality. After the Italians had gone, the squadron did some air firing and bombing at Lough Neagh, the largest lake in the British Isles, on the banks of which is Aldergrove aerodrome, the home of No. 502 (Ulster) (Bomber) Squadron. No. 201 has a bombing range of its own in safe water near Calshot spit, but more elaborate schemes for annual bombing and firing practice by flying boat squadrons are now under consideration. During the summer No. 201 also did some naval co-operation with the Rear Admiral (Submarines), using Stranraer as an advanced base. Usually during another part of the summer the squadron is affiliated with a fighter squadron to practise various schemes of attack and defence. The last affiliation was with No. 29 (Fighter) Squadron from North Weald, which flies "Bulldogs." August is the leave month, and September is usually taken up by a cruise in Home waters.

Last year No. 201 Squadron took part in the Coast Defence Exercises off the coast of Fife, in which both Royal Air Force and Royal Navy were concerned. Nos. 201 and 210 F.B. Squadrons acted together. Their base was Port Edgar on the south bank of the Forth, just above the Forth Bridge, and their task was to make long reconnaissance on both days to find the Fleet and to report its

movements. The flying boats proceeded independently to the Isle of May at the mouth of the estuary, and then spread out fanwise over the area of operations. Some boats went as far as 100 miles out to sea. The weather was very favourable for flying, and so the task of the boats in spotting the Fleet was comparatively easy. Their work, however, very much impressed observers—the present writer was up for nearly eight hours in one of the "Southamptons"—for it is a striking feat when aircraft fly so far and for so long, guided only by their own navigating officers, and spot and report every vessel within the given



ROUND THE ISLE OF WIGHT: Two views of No. 201 (F.B.) Squadron coasting in formation. The lower picture shows the formation just off the Needles. (FLIGHT Photos.)



area. Probably in real warfare a single "Southampton" could not have maintained its position over the Fleet all the afternoon when the Fleet included carriers. A single "Southampton" has some blind spots, and might be hard put to it to hold its own against a flight of "Ospreys." But before the next war comes (if it ever does) the "Southamptons" will have been replaced by something more modern. It may not be long, perhaps, before No. 201 gets "Scapas." By the same token, No. 201 Squadron is the only "Southampton" squadron to have an establishment of five aircraft. The others have only four. Therefore, if formation flying is a necessity for protection against attacks by fighters, we must have more flying boat squadrons, for a formation would be needed to do the work done last September by single boats.

The normal work of the squadron includes co-operation with the anti-submarine flotilla at Portland and with the Rear Admiral (Submarines) at Portsmouth, exercises with the Home Fleet, photography, normal collection of data for record purposes about points on the coast, signalling with wireless, semaphore, and lamp, interception of ships, practice in methods of search, navigation, instrument-flying, and night flying to find darkened ships. All this makes a

very mixed bill of fare. The officers also have to be experts at identifying warships and other sea craft. On the Coast Defence Exercises it was astonishing to note how good were their sea eyes. It is impossible to hold binoculars steady in a boat vibrating with the revolutions of two Napier 450-h.p. "Lion" engines, but the officers on the flying boat could see aircraft taking off from carriers 4,000 ft. below, which were invisible to the eyes of a landsman. Likewise the navigation was of a very high order, when after circling over the Fleet for some five hours out of sight of land the boat on its return made landfall only  $3\frac{1}{2}$  miles out of its reckoning.

Seaplane work in winter is a very cold job, but it is always fascinating. Moreover, there is always the feeling that in time it will be flying boats which will link up the defence of the different ports of the Empire and make safe the airways, possibly also the seaways, between them. In the narrow seas round the British Isles there may be less need for range and more need for speed than overseas. We look to the flying boats to defeat enemy submarines, and to convoy our food ships safely to harbour. And what more we may come to expect of them, time alone will show.

### Royal Air Force Squadrons

OTHER descriptive articles concerning the work of various R.A.F. Squadrons, etc., have been published in FLIGHT as follow:—

H.M. Aircraft Carrier *Glorious*. May 16, 1930.  
No. 4 (Army Co-operation) Sq., (South Farnborough); No. 17 (Fighter), Sq. (Upavon); and No. 33 (Bomber), Eastchurch. June 27, 1930.  
No. 601 (County of London) (B.) Sq., A.A.F. (at Lympne). August 15, 1930.  
No. 43 (Fighter) Sq. (Tangmere). September 19, 1930.  
No. 2 (Army Co-operation) Sq. (Manston). December 19, 1930.  
No. 101 (Bomber) Sq. (Andover). April 24, 1931.  
Nos. 240 and 209 (Flying-Boat) Sq. (Mount Batten). June 12, 1931.  
"1890-1912-1931." (An outline of the Growth of the R.A.F.) June 26, 1931.  
Cambridge University Air Sq. (at Old Sarum). July 10, 1931.  
Central Flying School (Wittering). July 17, 1931.  
Submarine Aircraft Carrier "M.2." July 31, 1931.  
Oxford University Air Sq. (at Eastchurch). August 7, 1931.  
No. 600 (City of London) (Bomber) Sq., A.A.F. (at Tangmere). August 21, 1931.  
No. 605 (County of Warwick) (Bomber) Sq. (Cas. Bromwich). April 1, 1932.  
No. 40 (Bomber) Sq. (Upper Heyford). May 13, 1932.  
Nos. 7 and 58 (Bomber) Sq. (Worthy Down). June 10, 1932.

A visit to H.M.S. *Exeter* of 2nd Cruiser Squadron, Home Fleet. June 17, 1932  
Oxford University Air Sq. (Eastchurch). July 22, 1932.  
Cambridge University Air Sq. (Netheravon). August 5, 1932.  
No. 1 Air Defence Group (A.A.F. and Cadre Sqs.). August 12, 1932.  
No. 100 (Bomber) Sq. (Donibristle). August 19, 1932.  
Scotland's Auxiliaries; No. 602 (City of Glasgow) (Bomber) Sq. and No. 603 (City of Edinburgh) (Bomber) Sq. September 16, 1932.  
London Auxiliaries; Nos. 600, 601 and 604 B. Sq. October 20, 1932.  
No. 25 (Fighter) Sq. (Hawkinge). December 8, 1932.  
No. 19 (Fighter) Sq. (Duxford). January 5, 1933.  
H.M. Aircraft Carrier *Courageous*. January 12, 1933.  
Lee-on-Solent. February 9, 1933.  
No. 23 (Fighter) Sq. March 2, 1933.  
Gosport. The Fleet Air Arm Base. March 30, 1933.  
Larkhill. R.A.F. Balloon Centre. June 8, 1933.  
The R.A.F. Staff College, Andover. July 20, 1933.  
No. 99 (Bomber) Sq. (Upper Heyford). August 3, 1933.  
No. 26 (Army Co-operation) Sq. (Catterick). August 10, 1933.  
No. 3 Flying Training School, Grantham. August 17, 1933.  
No. 1 (Fighter) Sq. September 7, 1933.  
No. 207 (Bomber) Sq. October 12, 1933.  
No. 502 (Ulster) (Bomber) Sq. November 23, 1933.  
North Coates Fitties No. 2 Armament Camp. December 21, 1933.  
No. 14 (Bomber) Squadron. January 18, 1934.  
Calshot Seaplane Training Squadron. March 15, 1934.



NO. 201 (FLYING BOAT) SQUADRON: A group of officers and airmen under the wings of a Supermarine "Southampton" in one of the sheds at Calshot. (FLIGHT Photo.)

### Germany's air budget

THE German Budget for defence exceeds that of last year by some £10,000,000. The Air Budget is raised from £7,073,850 to £9,579,000.

### City Literary Institute lectures

A COURSE of ten lectures on "Aviation—The Story of Flying" will be given by Mr. Fred Montague, former Under-Secretary of State for Air, at the City Literary Institute, Goldsmith Street, Drury Lane, W.C.2, on Fridays, from 7.30 to 9.30, beginning on April 13. The following are the titles of the lectures: (1) Flights—of Fancy, from Icarus to Leonardo da Vinci, (2) First Principles, Heavier than Air Science, (3) The Birth of a Plane, (4) Standards of Airworthiness, (5) Control from the Land, (6) Civil Aviation, (7) Special Uses of the Aeroplane, (8) Blazing the Air Trail, (9) Service Flying, (10) The Future of Flying. The fee for the course (London residents) is 2s. 6d. To London students already attending another course at the Institute this is reduced to 1s. 6d., and to

students who have already paid the inclusive fee the lectures are free. Special conditions apply to those resident outside the Administrative County of London, particulars of which are obtainable on application to the Principal.

### Carrying matches in aircraft

AT an inquest held at Epping on Tuesday, March 27, on Norman G. Bartholomew, of Enfield, Middlesex, who was killed when an aircraft flown by Mr. Eric Dymond, of Palmers Green, crashed at Nazeing, it was stated by Police-Sergeant Billet that two boxes of matches which had been fired were found on Mr. Bartholomew. In his opinion, it was only the fact that air could not get to the matches, as they were in a trouser's pocket, that avoided an explosion. The jury recommended that there should be a regulation regarding the carrying of matches by occupants of aircraft. Maj. Fell, who represented the Air Ministry, said that, so far as he knew, there were no regulations against carrying matches. The recommendation of the jury, he said, would definitely be taken up.

# Air Transport & Commerce.

## M.S.A.F. START LONDON-GLASGOW LINE

*Working arrangement between M.S.A.F. and Hillman's Airways.  
Through bookings from Glasgow to Paris via Romford*

**M**R. RAMSAY MACDONALD, the Prime Minister, and Lord Londonderry, the Secretary of State for Air, officially inaugurated the London-Glasgow air service of Midland & Scottish Air Ferries, Ltd., on Friday, April 6.

They did so by their presence at a luncheon given by the Lord Mayor of Liverpool, in the Town Hall, and by the subsequent naming of the Avro 642 which the company had taken over that morning, at Spēke Aerodrome.

This inauguration opens what may possibly be the first round in a battle between independent air line operators and the newly formed Railway-Imperial Airways combine called Railway Air Services, Ltd. That a fight for the control of internal air traffic will ensue is by no means certain, but we understand that there is a very strong movement afoot to establish a combine of the existing operating companies in order that mutual help may enable them better to face competition from any lines which may be operated by the railway-owned company. Last week the first official announcement of Railway Air Services was made, and our readers will have seen that one of the lines mentioned was that between London, Belfast and Glasgow, which was to be operated by the London Midland & Scottish Railway Company. There was no men-

tion of Midland & Scottish Air Ferries having come to an agreement whereby they would operate this line for the railway-owned concern, and as far as we have been able to discover there is no intention of their doing so. If no such arrangement is made, then direct competition must result, and Mr. John Sword, managing director of the M.S.A.F., will find himself up against the huge resources of the railways backed by the subsidised experience of Imperial Airways. A sorry state of affairs, out of which it is difficult to see any good coming! We are given to understand that the arrangement which now exists, whereby Mr. Sword will run his machines to Romford so that his passengers will be able to book right through via Hillman's Airways to Paris, supersedes a similar previous arrangement between Mr. Sword and Imperial Airways, all of which seems to point to open competition, which can but be deprecated and should be avoided.

The actual service between Liverpool and Romford opened with a twice daily connection on Monday, April 9. The aeroplanes used being, when the traffic necessitates, the Avro 642 and Avro "Ten" from Liverpool; Airspeed "Ferry" will run to Belfast, and D.H. "Dragons" to Glasgow.

The Prime Minister and Lord Londonderry spent Thurs-



THE BAPTISM: The Prime Minister naming the Avro 642 of Midland & Scottish Air Ferries, Ltd., the "Marchioness of Londonderry."



**ON THE WAY HOME :** On the left the Prime Minister and Lord Londonderry are sheltering from the rain during a brief halt at Wittering, the Central Flying School of the Royal Air Force; with them is Grp. Capt. P. C. Maltby, the Commanding Officer. On the right is Mr. John Sword, whose enterprise is responsible for the foundation of Midland & Scottish Air Ferries, Ltd.



day night at the latter's house, Rankesborough Hall, in Rutlandshire. On Friday morning they drove to Castle Bromwich, where Sqd. Ldr. H. G. Malet, chief pilot of M.S.A.F., was awaiting them with the Avro 642, and they landed at Speke at 12.30 p.m., where they found the Lord Mayor and other civic dignitaries supported by a "guard of honour" composed of fifteen aeroplanes, all painted in the red and white colours of M.S.A.F.

At the luncheon in the Town Hall, the guests included, besides the Prime Minister and Lord Londonderry, Lord Inverclyde, Lady Londonderry, the Lord Mayor of Belfast, the Lord Provost of Glasgow, the Governor of the Isle of Man, Air Marshal Sir John Higgins, the Director of Civil Aviation, the Director of Aeronautical Inspection, Mr. John Sword, Sir Thomas White, Sir Max Muspratt and Sir Alan Cobham. Coincident with this luncheon was another in the Adelphi hotel given by M.S.A.F. and presided over by Mr. Stephen Cosh, secretary of the company. Among the guests were the Mayors of Bootle, Birkenhead and Wallasey, Mr. E. Hillman and Mr. A. Dean, chairman of the Liverpool Chamber of Commerce.

After these luncheons, forces were joined in the Council Chamber of the Town Hall for the speeches.

**THE LORD MAYOR OF LIVERPOOL** (Mr. G. A. Strong), in welcoming the Prime Minister, said that his, the Prime Minister's, presence, together with that of Lord Londonderry, was evidence of the Government's desire to advance the interests of the great new air service. Liverpool, he went on, was anxious to take an important part in the provision of flying facilities, and for this reason they had purchased the 2,000-acre site at Speke. He referred to the opening of the aerodrome on that site in July last year by Lord Londonderry, and also to the fact that it had a three-mile river frontage as well as admirable road and rail facilities to it. Although thousands of pounds had already been spent on levelling the aerodrome, the Corporation had, in this year's estimates, allocated a further £60,000 for its development, and full Customs facilities had been provided. Apart from the aerodrome there still remained a very large area available for factories and other purposes.

**THE PRIME MINISTER** said "I am on holiday just now—perhaps a holiday somewhat in the nature of the proverbial busman's holiday. But I came to Liverpool this afternoon because Liverpool has once again shown its plasticity of mind and enterprise in inaugurating a new air service, which is going to start in London, call upon Liverpool, wander across the sea to Belfast, and finally reach Glasgow. This is a very interesting thing for me, but, being on holiday, I can indulge more than I generally do in personal and private thoughts. That service is associated with a very good friend of mine, who, in other walks of life, has shown great courage, great enterprise and much success—I refer to Mr. Sword. I hope that in this new enterprise of his he is to record another great success.

"This age wants men, whatever their years may be, who themselves will take up responsibility and who regard action as the best kind of advice they can give to anybody. Example is always better than precept, and Mr. Sword is one of the men who, modest and somewhat economical of advice, is always anxious to put his hand to the plough and drive it right through the furrow. That is the sort of man this generation requires, whether

it is in housing, in dealing with unemployment, in developing new ideas, in strengthening the activities of British enterprise, or whatever walk of life. That is the type of man who is going to give the best service that anyone can give to this generation in solving its problems and in laying the foundations of future prosperity. We have got a new chapter opening to-day. What is happening here is but an illustration of a great new chapter in British enterprise. The air is to be the pathway, or at any rate much of the pathway, of the future. We are going to lift up our wings on high and scorn the horse and his rider. . . . Thereafter Mr. MacDonald became visionary and talked of everyone rising from his backyard and settling down vertically to call upon his neighbours, all of which had little connection with the future of air lines. In conclusion, he expressed his delight at the generous hospitality of the Lord Mayor and the welcome which had been extended to him by the City.

**SIR THOMAS WHITE** said that the visit of the Prime Minister was a most welcome one, as it denoted satisfaction with the enterprise of Mr. John Sword. He felt that we were lucky in having a flying Prime Minister and a Secretary of State for Air who not only flew, but owned and piloted his own machine. He hoped that Liverpool would become the Croydon of the (North?) West.

**LORD LONDONDERRY** thanked the Lord Mayor most heartily for his hospitality. He said that it was the beginning of July last year when he had inaugurated what might be called the cradle of flying in Liverpool, and now in April it was most fitting that there was a baby, for which Mr. Sword was responsible, to put into that cradle, and he wished him all success with his infant. He referred to Empire Day on May 24, which is also to be called Empire Air Day. He said that during his time in the Air Ministry much harm had been done by newspapers looking at aviation from the wrong angle, namely, that of the military aspect. We ought to consider the benefits it offered by linking up nations and acting as an agent of peace rather than by one of destruction. Our duty to posterity, as the first aerial generation, was to develop flying for the benefit of mankind. He also congratulated Imperial Airways, whom he considered had done more for the development of civil aviation than anyone else in any other country.

**THE LORD PROVOST OF GLASGOW** was glad that the enterprise of Mr. Sword was helping Liverpool men to save time. He envied them their aerodrome at Speke, as Glasgow had done nothing except talk about an aerodrome for many years, leaving it to a little burgh—Renfrew—to establish one for them. He hoped that the enterprise would have success, particularly in view of the difficulties caused by subsidised competition, and he felt that private enterprise of this nature should be helped in every way.

**THE LORD MAYOR OF BELFAST** said that Belfast was the first City in the Kingdom to acquire an aerodrome, but

to-day that aerodrome was unsuitable. He reminded those present that the visit of Lord Londonderry was doubly important to them, because not only was he a Freeman of the City of Belfast and by virtue of his office closely connected with aviation development, but also he was making his own aerodrome close to the City. They owed a great deal, he thought, to Mr. Sword, and he felt that the time had come when the whole question of Government and municipal assistance should be considered seriously. He also asked for the establishment of a far greater number of aerodromes.

MR. JOHN SWORD thanked the Prime Minister and Lord Londonderry for their kind words of encouragement. The operation of air lines presented many difficulties in the face of State-aided competitors with unlimited resources, but he realised what he was up against and was doing all he could to make it a success. He said that people could now book through to Paris by Hillman's Airways.

After the luncheon was over the whole party went out to the aerodrome at Speke, where Capt. H. J. Andrews is manager for the Liverpool Corporation. There the Prime

Minister duly named the Avro 642 the *Marchioness of Londonderry*, a ceremony which tradition, for some reason, demands shall be accompanied by the breaking of a bottle of champagne. The bottle was broken.

We were fortunate enough to be offered a return flight to London in this machine, and so embarked with Mr. MacDonald, Lord Londonderry, Lt. Col. Shelmerdine, Lord Inverclyde, Lt. Col. Outram, Capt. A. G. Lamplugh, Mr. Alan Muntz, Mr. E. Hillman and others, all of whom appeared to enjoy the comfort provided. A brief halt was made at Wittering to disembark Lord Londonderry, and the final landing was made at Heston. The weather was not good, and there was a considerable amount of low cloud. But the two Siddeley "Jaguar" engines relieved our minds of the worry of forced landings, while the internal upholstery of the cabin and the well-planned ventilating and heating system gave us a pleasanter journey than we could possibly have had by rail. Cruising at 135 m.p.h. and backed by a reliable radio service, this machine should really make internal air traffic operation look like a commercial proposition.

## HULL PREPARING FOR K.L.M. NORTH SEA SERVICE

**H**ULL Municipal Airport at Hedon is rapidly being prepared for the K.L.M. Amsterdam-Hull service, which is due to start on June 1. As the service will be experimental, for a period of about four months, only the essential improvements are being made, chief of them being the enlargement of the present landing area to embrace the whole of the site that has always been reserved for the municipal airport. Fences are being pulled down and overhead wires and cables removed, and the K.L.M. pilots will have an area of nearly 200 acres on which to handle the 3-engined Fokker monoplanes.

Apart perhaps from minor alterations, the existing buildings will suffice for the period of the experiment, but the Hull Aerodrome Committee of the City Council are fully alert to the future needs of the airport if the North Sea line becomes permanent, which they hope will be the case. It is naturally felt that the immediate future of Hedon is dependent upon the success of the K.L.M. venture, although, of course, it is not the only egg in the basket. But it is certainly the biggest egg.

The Council now has full control of the airport, and it is prepared to develop it as occasion demands to satisfy all reasonable expectations from air operators. In an interview with the Town Clerk's officials this week we were informed that amongst the facilities they hope to provide at the opportune moment is a wireless station employing a directional-finding system for guiding the Dutch pilots across the North Sea, particularly in foggy weather, and other pilots concentrating upon Hull.

A Customs service will be arranged for June 1.

### HULL-GRIMSBY SERVICE AGAIN?

WHILST in the Hull district last week we inquired of the North Sea Aerial & General Transport Co., Ltd., at Brough, about the resumption of their Hull-Grimsby air service, which they operated with success last summer in conjunction with the East Yorkshire Motor Coach Co. We were informed that no decision has yet been made, and we gather that there is some doubt as to whether the service will be restarted. But the company have issued details of an air taxi service from Brough and Hedon to all parts of the country, which include connections with the Empire air liners at Croydon.

### AUSTRALIAN SERVICES TENDERS

It is stated by *Aircraft* of Melbourne that West Australian Airways and a number of other interests represented by Mr. Ulm have combined to tender for all the services for which the Australian Government is offering subsidies. In all the combined interests have submitted 21 alternative tenders for the Eastern and Oversea (Darwin-Singapore) sections, as well as for the West Australian section from Katherine to Perth. The principal tender is based on the use of the Vickers "Vellox," but other types are quoted for some sections. The combine state that if their offer is accepted they will form a new company, to be known as Commonwealth Airways, Ltd., with a nominal capital of £500,000—of which £50,000 had already been subscribed. It is also stated that Sir Charles Kingsford-Smith has sent in a tender, jointly with Mr. G. A. Robinson, of New England Airways, for some of the mail contracts, on the basis of the Avro 10 machines of New England Airways.

Mr. A. Pickard, the Town Clerk, is already making an effort to secure local support for the K.L.M. line. The Corporation is endeavouring to induce K.L.M. to introduce bulk fares at a reduced rate, and Mr. Pickard has written to Hull business houses inviting them to say whether they would take advantage of such facilities if afforded. Their replies ought to reveal the amount of traffic that K.L.M. can expect from the Hull terminus.

Pending the appointment of passenger and freight agents locally the Town Clerk will assist anyone with information.

K.L.M. has now issued a table of ordinary fares, as follows:—From Hull to Amsterdam, £5 (return £8 10s.); Berlin, £10 (return £17); Copenhagen, £12 (return £20 8s.); Hamburg, £8 5s. (return £14 0s. 6d.); Liverpool, £1 10s. (return £2 11s.); Malmö, £12 10s. (return £21 5s.); Rotterdam, £5 7s. 6d. (return £9 2s. 9d.).

Except for Sundays the service will be daily. The flying times from Hull will be as follows:—Amsterdam, 2½ hours; Copenhagen, 5 hours 20 minutes; Malmö, 5 hours 50 minutes; Berlin, 6 hours 50 minutes. The flying time to Amsterdam is the same as that from Croydon, and as the Lincolnshire coast will be followed, the time spent over open sea will probably be less than on the direct route from the Thames mouth. Before one realises this fact the service seems adventurous for landplane operation. It is not an unfavourable reflection upon the wisdom of the Dutch pilots to suggest that when the skies are blue over the North Sea those experienced airmen will remember that the shortest distance between two points is along a straight line, whether Professor Einstein agrees or not!

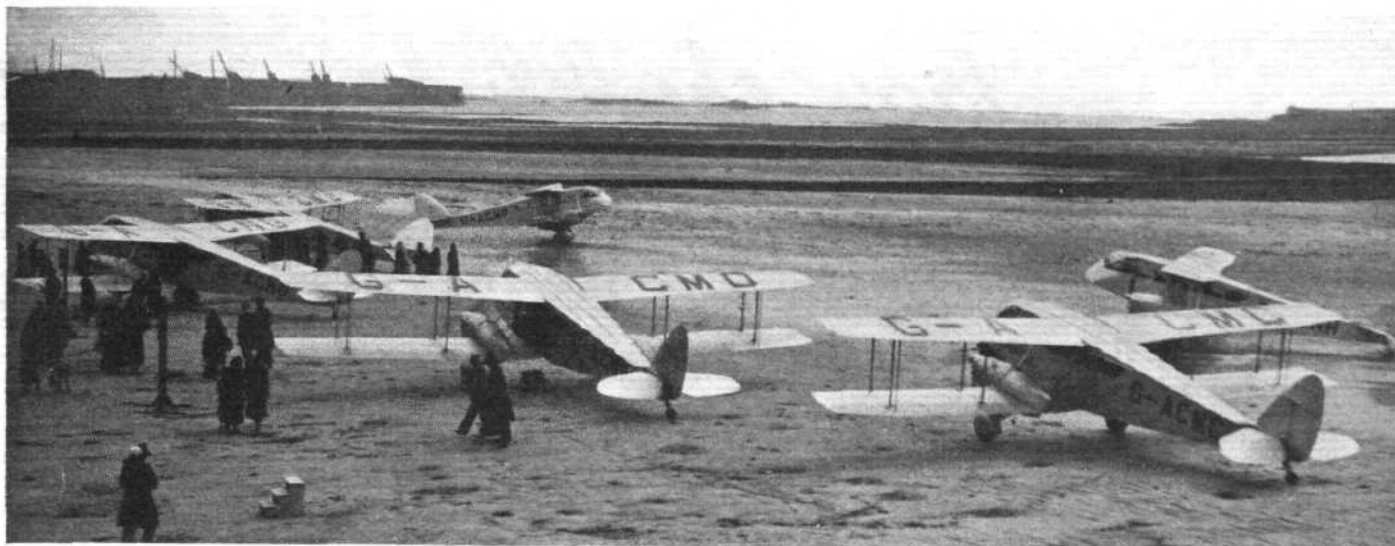
### AN AUSTRALIAN AIR MAIL SERVICE

ACCORDING to *The Times* Adelaide correspondent, an unsubsidised aerial mail passenger service in Australia was inaugurated on April 4 by the arrival of the Western Australian Airways new 10-seater De Havilland "Dragon" from Perth. The double journey is over 3,000 miles, which is to be covered weekly. During the past five years Western Australian Airways has maintained a mail service from Wyndham to Adelaide, which is 3,500 miles, and to the end of March the machines had covered 2,890,364 miles and carried 33,543 passengers, 181,853 lb. of letters and 915,455 lb. of freight. The subsidy for the Perth-Adelaide service expired at the week-end.

### SPEEDING UP IMPERIAL AIR SERVICES

THE POSTMASTER-GENERAL announces the following improvements in the Imperial air mail services. Commencing with the service leaving London on Wednesday, April 11, the England-South Africa air mail service will be accelerated by one day; the mails will be due to reach Alexandria and Cairo on Friday, Khartoum on Saturday, Nairobi on Monday, Mombasa and Dar-es-Salaam on Tuesday, Broken Hill and Salisbury on Wednesday, Bulawayo and Johannesburg on Thursday, and Kimberley and Capetown on Friday, 9 days after despatch from London. In the reverse direction the mails will leave Capetown on Tuesdays and will be due to reach London on Thursdays, the first arrival under the new conditions being on Thursday, April 19. The England-India-Malaya air mail service will also be accelerated; the mails leaving London on Saturday, April 14, and subsequent Saturdays, will be due to reach Alexandria and Cairo on Monday,





**AERIAL ACTIVITY AT JERSEY:** Six D.H. "Dragons," of Jersey Airways, Ltd., on the sea-shore "aerodrome" at St. Helier during the Easter rush.

Gaza and Baghdad on Tuesday, Basra on Wednesday, Karachi on Thursday, Calcutta and Bombay on Friday, Madras and Rangoon on Saturday, and Bangkok and Singapore on Sunday, 8 days after despatch from London. The return service will leave Singapore on Sunday and, as from April 23, will be due to reach London on Monday. The public are reminded that correspondence for India intended for transmission by air beyond Karachi should be prepaid at the rate of 8d. for the first  $\frac{1}{2}$  oz. and 7d. for each additional  $\frac{1}{2}$  oz. (postcards 4d.), and superscribed "By Air in India."

#### AIR MAILS TO SOUTH AMERICA

THE POSTMASTER-GENERAL announces that a fortnightly air service from Germany to South America is now available for correspondence from this country at the same charges as those for the existing air service, namely:—To Brazil: Letters, 3s. 6d. per  $\frac{1}{2}$  oz.; postcards, 1s. 9d.; printed papers, etc., 10d. per  $\frac{1}{2}$  oz. To Argentine, Bolivia, Chili, Paraguay, Uruguay: Letters, 4s. per  $\frac{1}{2}$  oz.; postcards, 2s.; printed papers, etc., 1s. per  $\frac{1}{2}$  oz. Correspondence intended for conveyance by the German service should bear, in addition to the blue Air Mail label, the inscription "By German Air Mail." The flights will leave Germany on alternate Saturdays, commencing on Saturday, April 14, and the correspondence will be due to arrive, after despatch from London, as follows:—Rio de Janeiro, Thursday, six days; Monte Video, Buenos Aires, Friday, seven days; Santiago, Saturday, eight days; Arica, Monday, ten days; La Paz, Tuesday, eleven days. Letters for this service can be posted in London up to the times of the last collection from the ordinary boxes on Thursday, April 12; letters can also be posted up to 5.0 a.m. on Friday, April 13, in the special Air Mail box at the General Post Office, King Edward Building, London, E.C.1, and about an hour earlier in the special Air Mail boxes in the London Head District areas. The latest times of posting elsewhere can be ascertained from the local Head or Branch Office. The same times of posting will apply for each fortnightly flight.

#### TIMES OF POSTING AIR PARCELS

THE POSTMASTER-GENERAL announces that as from April 10, the latest times of posting air parcels at the General Post Office, London, for despatch by the England-South Africa and England-India Air Mail services will be 9.0 p.m. on Tuesdays and 9.0 p.m. on Fridays respectively.

#### PROJECTED BRITISH AIR LINES

AMONG the projected air lines in the British Isles are:—Bristol-Bournemouth by Western Airways, Ltd.; Portsmouth-Bournemouth by Portsmouth, Southsea & Isle of Wight Aviation Co., Ltd.; Gatwick-Paris by Airports, Ltd.; Birmingham-Leicester-Nottingham-Skegness by Eastern Air Services, Ltd.; Dublin-Waterford-Cork-Limerick by the Irish Aviation Development Corporation, Ltd.

#### CZECHOSLOVAKIAN ACTIVITIES

THE Czechoslovakian State Air Lines have made known the following programme for 1934. From May 1 to August 31 a service will be operated between Praha, Brno, Bratislava, Kosice, Uzhorod, Cluj and Bucharesti.

Connecting with Bratislava, a second service will be in operation between Zagreb and Susak from June 1 to August 31. Between these same dates, another service between Marianske Lazne-Karlovy Vary-Praha will be flown. The operating equipment will consist of five Letov S.32 five-seaters (three Walter "Mars") and five Fokker F.VII 3m's (three Walter "Castors"). One Caproni Ca.97 (three Walter "Mars"), one Aero A.38 (Walter "Jupiter") and two Aero A.35's (Walter "Castor") will be held in reserve.

#### U.L.G. (HUNGARY) IN 1933

THE Ungarische Luftverkehrs A.-G. ran four services in 1933:—Budapest-Vienna; Budapest-Klagenfurt-Venice; Budapest-Pécs-Kaposvár; Budapest-Miskolcz. There was no change in the 1932 time-table, except for an additional mail service on Sundays during the summer between Vienna and Budapest. Fokker aircraft were used on all routes, and these played a considerable part in returning a regularity of service of 98.5 per cent. The following table compares the 1933 operating statistics with those for 1932:—

	No. of Flights	Distance Flown	Passengers	Luggage Tons	Freight Tons	Mail Tons
1933	620	79,150	2,610	29	5	2
1932	581	75,559	2,494	30	6	1

Percentage regularity in 1933 was 98.5 and 1932, 99.7

No important changes are anticipated in the U.L.G.'s 1934 programme.

#### FOURTH D.L.H. SOUTH AMERICAN MAIL FLIGHT

THE return trip of the fourth South American air mail flight made by Deutsche Luft Hansa was completed according to plan. Mails left Rio de Janeiro on March 22 and arrived at Berlin at noon on March 27.

#### I.A.T.A. CONFERENCE AT PRAGUE

It was decided at the Conference of the International Air Traffic Association, which was held at Prague on March 22 and 23, that season tickets, similar to those issued at present only by Imperial Airways and Deutsche Luft Hansa, will henceforth be issued by all airlines belonging to the I.A.T.A. These tickets, which will be valid for six months, will cost 4,500 francs, or the equivalent in other currencies. Holders may use them on any airway belonging to a company which belongs to the I.A.T.A., and are entitled to reduction of 20 per cent. on actual fares in force. It was also decided at the Conference that companies belonging to the I.A.T.A. shall make a 30 per cent. reduction in fares for return journeys. Two time-tables will be drawn up each year, the first to come into force with the beginning of summer time in France, and a winter time-table, the inauguration of which will be coincident with the beginning of winter time. Rates for the carriage of excess baggage have been considerably lowered. This is a very necessary improvement, for many passengers have been prevented from flying over long distances owing to the high charges for the transportation of their baggage. The next I.A.T.A. Conference will be held at The Hague on August 28 and 29. This date will coincide with that of the 15th anniversary of the Association. Mr. Plesman, of K.L.M., will be in the chair.

# From the Clubs.

## HATFIELD

During last month the aircraft of the London Aeroplane Club flew for 306 hours. This figure was not equalled during any month last year. Five new members have joined the club, Messrs. J. Addison, W. G. Grant, C. Byers, J. R. Hall and J. Reyner. Mr. Sumanadasa made his first solo flight and Mr. Meikle completed tests for his "A" licence. A large amount of flying was done over the Easter holidays, and 40 aircraft, including "Avians," "Moths," "Leopard Moths," a Spartan, a "Monospar" and an Autogiro (flown by Mr. R. A. C. Brie) visited the aerodrome in four days. Sir Derwent Hall-Caine has been flying his "Leopard Moth" nearly every day. The London Aeroplane Club records 74 hr. 5 min. flying and the R.A.F. Flying Club 8 hr. 20 min.

## HANWORTH

Flying time on Club aircraft for the week ending April 6 amounted to 51 hours 20 minutes. On Sunday, four N.F.S. machines, two Autogiros and three privately-owned aircraft took off from the London Air Park to take part in the Dawn Patrol at Brooklands. Aided by low clouds, etc., several machines got through, and their pilots enjoyed the free breakfast supplied by Brooklands Aviation Club. On Monday, Mr. Kirwan, who is in training for his "B" licence, carried out a cross-country flight to Grimsby. M. Le Parmentier, of Guernsey, has been completing his tests for "A" licence at Hanworth in order to enable him to fly the machine which he, together with the help of an ex-R.A.F. officer and a boy from his garage, has built in 18 months. These three people have worked on the machine in the evenings and on Sundays, and between them have built the entire machine from raw material. An interesting visitor to the club this week was Miss Joan Meaking. She had lunch in the clubhouse with Lady Cobham on Friday.

## BROOKLANDS

Improvement in the weather last week resulted in an increase of flying hours, the total for the week being 78 hours 10 minutes, 48 hours dual and 30 hours 10 minutes solo. New members joining during the week were Messrs. Orton and Starey. S. C. Pacey and J. Cresswell have completed their "A" licence tests. John Cresswell, it is to be remembered, is a school boy who started flying at the age of 16, at the latter half of last year. During the week the Club Navigation Instructor was kept busy doing cross-country flights. R. Harrison completed his tests on a "Fox Moth" for endorsement on his "B" licence. Cross-country flights were carried out to Hendon, Hull, Sywell, Portsmouth, Eastbourne, Shoreham and Gatwick. The first Dawn Patrol of the season was held on Sunday, April 1. Brooklands sent four patrols of three machines each and were successful in intercepting 14 visiting machines. Fifty-two people sat down to breakfast at 8.30 a.m., and the occasion was certainly the

most successful Dawn Patrol held at Brooklands. The Club Committee would like to thank visiting pilots for their consideration of the new rule on the occasion of the race meeting held on Easter Monday, and would emphasise that they are only too pleased to welcome visitors on race days providing they arrive before the meeting starts, and obtain permission from the control office to leave between races. Private owners and members are welcome to the opening of the new Sywell Aerodrome at Northampton on Sunday, April 22.

## CINQUE PORTS FLYING CLUB

Flying hours totalled 25 hours last week, and in spite of a bad Easter week-end, when the machines stayed in the hangar the whole time, Messrs. T. A. Stewart and R. Bailey completed their "A" licence tests, and Messrs. Murray Smith, D. J. R. Parker and J. O. Willis made successful first solo flights. Cross-country flights were made to Hamble, Romford, Brooklands and Paris.

## READING AERO CLUB

Woodley has been very busy again this week, being favoured with good weather. On Saturday last Mr. J. E. Gwynne Johns, who had already made three parachute drops at Reading during the past two years, made four drops during the afternoon. Mr. Johns, who is a clerk in Aberystwyth, hopes to beat Mr. John Trantum's record. Messrs. Miles and Barrett, in a Miles "Hawk" ("Cirrus III"), accompanied by Mr. Cliff in another machine of the same breed, flew over to the Norfolk and Norwich Aero Club, where numerous members and others took the opportunity of trying out the machines. Weather permitting, all private owners who are able will fly to Bristol next Sunday, on a visit to the Bristol and Wessex Aero Club. Lord Apsley, the President (who is also President of the Bristol Club), has consented to lead the formation. Members are reminded that subscriptions to the Reading Aero Club are now due, and all are asked to remit as soon as possible, as the spring is now drawing near. The tennis court will shortly be fit for use. Mr. and Mrs. Powis, who have been away for the last two weeks on a well-earned holiday in Portugal, are expected home soon.

## CARDIFF AEROPLANE CLUB

Flying times for the past week are as follows:—Dual, 10 hr. 40 min.; solo, 20 hr. 55 min., and tests, 45 min. Mr. G. L. Davies has joined the club as a flying member.

## BARNSTAPLE AND NORTH DEVON FLYING CLUB

On April 2 the Club held its first annual dance, which was a great success, some 250 members and friends attending. Incidentally, this was the largest dance held in Barnstaple for some years. This Club, and the aerodrome at Heanton Court, were only started on December 1 last, and the "flying stock" includes two school "Moths" and a D.H. "Dragon" ten-seater, which is used for air taxi, etc., work.



FROM BARNSTAPLE: Some members of the recently-formed Barnstaple and North Devon Flying Club. Included in the group are R. T. Boyd, founder of the Club, and T. W. J. Nash, A.F.M., pilot.



## NORFOLK AND NORWICH AERO CLUB

The flying during the Easter holidays was the best the Club has had for the last two or three years, and in spite of the poor weather, most hours were put in on Easter Monday. The first of a series of co-operation flights with the 409th Battery A.A., Lowestoft, took place on Good Friday and Easter Monday. On these two days one of the club machines—G-ABCG—flew over the district of Lowestoft at varying heights and was in constant touch with the battery by means of ground signs. Pilots taking part in these manoeuvres were Messrs. H. Birchall, A. J. S. Morris and Miss W. Hudd, who accompanied the club instructor. The next series of flights will commence in about a week or so. A number of pilots took the opportunity given by the holidays of taking some refresher and advanced instruction with Mr. J. Collier. Also a number of joyrides were given to the public. The following received instruction from Mr. J. Collier:—Messrs. R. T. W. Ketton-Cremer and F. Rushmer. Advanced and refresher instruction:—Messrs. J. C. Smith and P. Britton, Misses W. F. Hudd and F. Henfrey. Soloists were Messrs. A. J. S. Morris, A. Kirkby, H. Birchall, Miss W. F. Hudd, Messrs. Oscar Garden, R. Forestier-Walker, H. C. Stringer, R. T. W. Ketton-Cremer, F. W. Rushmer and W. O'Brien. The club is pleased to welcome Mr. R. Forestier-Walker, of Cardiff, who came to the club during the holidays to recuperate from an operation, also Miss F. Henfrey, from Keston, Kent. Another club member who paid a visit during the holidays was Mr. Oscar Garden. It will be remembered that Mr. Garden learnt to fly at the club under F/O. R. J. Bunning in the summer of 1930. He obtained his licence after only 9 hours' instruction and was the fifth Australian to be trained by the club. He then obtained a few more hours' flying experience and then made his famous flight to Australia in a "Moth" in October and November of that same year. Visitors from other clubs and Miss Olive Kendall in a "Redwing" from the Ipswich Aero Club and Mr. E. F. Walter in a "Moth" from Brooklands.

The previous good flying was more than maintained last week when a total of 33 flying hours was reached. This is especially good as the club was closed for two days for staff holidays. During the week the club did some photographic work at Great Yarmouth. Mr. H. C. Stringer flew with a passenger to Brough. Also, the club held a supper dance in the clubhouse last Friday night to Wally Drane's "Follies" Dance Band, which was the best attended dance held for many months. The club is very pleased to welcome M. Roger Le Coultre from Switzerland, who is here in order to obtain his "A" licence. During the weekend a demonstration of the Miles "Hawk" was given to club members. The following received instruction from Mr. J. Collier:—Messrs. R. T. W. Ketton-Cremer, F. W. Rushmer and R. Le Coultre. The following took either advanced or refresher instruction:—Messrs. Frank Dawson Paul and E. V. Beaumont, Miss W. Hudd and Miss F. Henfrey and Mrs. Frank Crossley. Soloists were Messrs. A. Kirkby, R. Forestier-Walker, A. J. S. Morris, Miss W. Hudd, Messrs. H. Birchall, R. T. W. Ketton-Cremer, Mrs. F. Crossley, Messrs. S. Hansel, H. C. Stringer, F. W. Rushmer, Sqd. Ldr. V. Buxton and Dr. E. V. Beaumont.

## LANCASHIRE AERO CLUB

The Club's flying time for the week ending April 1 totalled 42 hr., and the best flight was that of Mrs. Davison ("Joy Muntz"), who made a quick flight to Glasgow and back. It is interesting to know that on this same day one of the machines of the new London-Glasgow air lines failed to get through beyond Manchester. The Club has said farewell to Mr. A. P. K. Hattersley, who has now left this district to take up duties with Hillmans. Amongst new members who have started flying instruction is Mr. Gabriel Toyn, the very successful new producer of the Manchester Repertory Theatre.

On April 7, Mr. Alan Goodfellow won the Senior Landing Competition at Woodford, and Mr. A. Collinge was a close runner-up. The Junior event was won by Mr. G. Hallam in an easy and convincing manner. A well attended dance was held in the club-house in the evening. During the week members and friends of the Lancashire Aero Club, who served during the war, held an informal Re-union Dinner, when interesting comparisons were made between flying nowadays and in war-type aircraft. Mrs. Eckersley, the wife of the Chairman of the Club, put up a very good show in completing her three hours' flying and all tests for the "A" licence in two days, and Peter Brothers failed to obtain his, only through not being old enough.

The Annual Staff Vacation has been fixed from April 20 to May 4, both days inclusive, during which period the club-house and aerodrome at Desford will be closed.

## YORKSHIRE AEROPLANE CLUB

Flying at Yeadon totalled about 7 hours last week, excluding flying done abroad by the four private-owner members of the Club who are at present taking an aerial holiday in Italy. Flying for the month of March, on Club aircraft only, totalled 24 hr. 30 min. Visiting machines of the week were:—G-ABLX, "Puss Moth," pilot Mr. Thorn, on March 31; G-ACAB, "Puss Moth," on April 1; and G-AAXO, "Puss Moth," pilot Lord Clydesdale, on April 1.

## MIDLAND AERO CLUB

During the period March 29-April 5 the Club was only open for three days, and flying times were 8 hours 45 minutes dual and 3 hours 15 minutes solo. Four Club aircraft visited Desford on April 3. Private owners were busy, Mr. Jeff Davison flying to Orley and Cannes and back on his "Puss Moth"; Mr. Baker and Mr. L.L. Hodgson flying to Brussels and home. Among the visitors were Mr. Douglas Fairweather, of Renfrew, in an "Avian," and Mr. Glover, of the Southend Club, in a "Bluebird." Five new members, Messrs. Levetus, Cannell, Porter, Barnet and W. C. Johnson, have recently joined. Mr. D. Derry made a successful first solo.

## MARSHALLS' FLYING SCHOOL, LTD.

The School has been practically closed during the week, and only open for emergency tuition and air taxi work. Time, dual 4 hours, solo nil. Three air taxi trips were made, including one from Hertford to Leicester with Mr. Nichols, the South African jockey, who had to attend an inquest at Hertford until 1 p.m. in the morning and had to ride at the Leicester meeting in the afternoon.

## COTSWOLD AERO CLUB

A member of this Club has just put up a rather remarkable achievement—accomplishing a first solo flight after only two hours 55 minutes instruction. He is Mr. J. B. Marsh, who is only 19, and is studying in Gloucester. The above time consisted of seven lessons spread over the period of December 12 last to March 22, his last previous lesson being on February 22. Prior to commencing instruction his experience of flying consisted of our short joy rides. The Cotswold Club has over 120 members, of whom some 35 hold "A" licences, and the Chief Instructor is Mr. J. C. Harcombe.

## A.S.T. EXPANDS

The ever-increasing popularity of Air Service Training, at Hamble, which is based on its well-deserved reputation as the premier training school of its kind, has made necessary a policy of continuous expansion. During the past month the staff of flying instructors was increased by the arrival of F/O. A. J. Tunnard, who prior to taking up this appointment was a member of the staff of the R.A.F. Central Flying School. The School's already comprehensive fleet of aircraft was augmented by the delivery of two new Avro "Cadets," with provision for maintaining inverted flight in addition to their normal equipment. Three other "Cadets" were modified in the same way, so that the School now possesses five Avro "Cadets" and two Avro "Tutors" equipped for inverted flying. Increased living accommodation was also found to be necessary, and to this end a new block of quarters containing fifteen bedrooms is now nearly ready for occupation. The increase in messing accommodation by the enlargement of the A.S.T. Club is also almost completed. Work was started on the excavation of a swimming bath so that both fresh-water and sea bathing will soon be available. This, and the second hard tennis court, which was laid down last month, should prove exceedingly popular innovations.

A total of 528 hours' instructional flying was carried out during March, again twice the amount flown in the corresponding month last year. During the month Messrs. D. G. S. Grant, J. D. Hamilton, R. D. Hanbury and W. C. Soule obtained their pilot's "A" licences, Messrs. G. T. Greenhalgh and T. C. Wallace their pilot's "B" licences and Messrs. C. E. Gardner and A. le R. S. Upton their ground engineer's "A" and "C" licences. New arrivals at the School were Mr. W. F. Warner for the instructor's course and F/O. E. Rotheram for the ground engineer's "A" and "C" licences and the wireless operator's licence. Messrs. R. J. Needham and R. Penoyer commenced flying; the former received advanced flying instruction preparatory to joining the R.A.F. Reserve, and the latter training for the pilot's "B" licence. Col.

Boys and Capt. Henke, of the Colombo Air Service, paid a visit to the School to investigate at first hand the comparative merits of the Avro "Tutor," 626 and "Cadet" as training aircraft. Great interest was shown in the School equipment and work in general.

Squash matches were played against R.A.F., Worthy Down, and R.A.F., Lee-on-Solent, both resulting in wins for A.S.T., with scores of 4-1 and 3-2 respectively. Hockey and soccer matches were played, and a number of miniature rifle matches shot off throughout the month, with varying degrees of success. The miniature rifle team won the Divisional Championship of Division IV of the Hampshire League, a very meritorious achievement in the first year of competing.

#### LONDON GLIDING CLUB

On Saturday and Sunday, April 7 and 8, an almost complete absence of wind allowed the use of the full range of club machines, from primaries to the two-seater *Kassel*. On Sunday the sun shone vigorously, setting up some gentle thermal currents, so that the *Falke* was able to make

some uncanny sustained flights in no wind at all. In one she wandered out to the hangars at a steady 200 ft. and then descended rapidly; in another she soared along to the corner preceding the Zoo and then ran home with plenty of height in hand. Her stability is wonderful. All that is required of a pilot is enough confidence to leave her to her own devices, and enough sense to direct her to the right places.

Owing to recent immense publicity in the lay Press, the crowds were shocking. The launching point was embarrassingly congested, and both sexes sun-bathed all over the landing ground. Nobody was hit.

#### A NEWCOMER

A new flying club is being opened at Catterick by Com. C. W. Croxford, R.N., of Yorkshire Air Services. He has already taken delivery of a Miles "Hawk."

#### LIVERPOOL AND DISTRICT AERO CLUB

Flying time for the week ending April 6 amounted to 57 hours 45 minutes, made up of 13 hours 50 minutes dual and 43 hours 55 minutes solo.

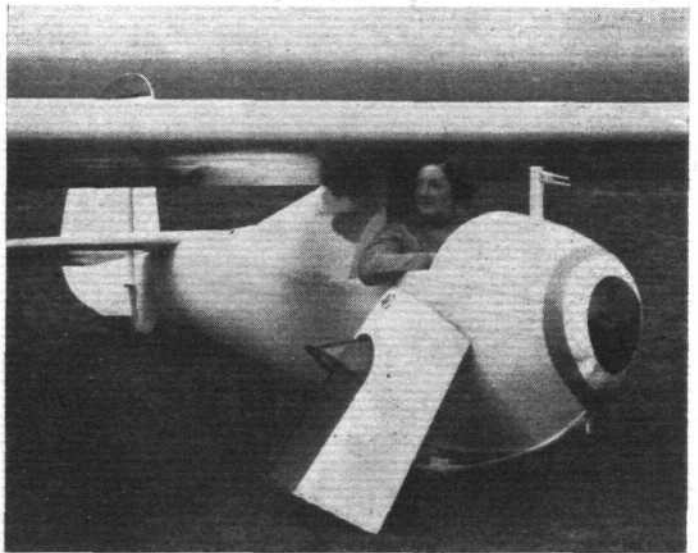
## A LONG-DISTANCE TOW

**L**AST week Miss Meakin left Griesheim, near Darmstadt, in a German glider towed by a Klemm (Hirth) flown by Herr Maier, who was accompanied by Herr Roeder, and flew to Cologne. On Tuesday, April 3, they flew a distance of 112 miles to Brussels in about 1½ hours. Miss Meakin was towed 75 miles on Wednesday to Ostend. Leaving Ostend on Thursday morning at 12.50 the Klemm, with Miss Meakin in tow, reached Lympne in 1 hr. 20 min. After leaving Ostend the coast was followed as far as Calais, the Channel being crossed at a height of about 3,000 ft., and after reaching Dover, Herr Maier turned south-west towards Lympne. Over Lympne the towing cable was released and Miss Meakin looped four times before landing. The subsequent journey from Lympne to Heston took 1 hr. 40 min.

Flying in the Handley Page "Clive" (two geared "Jupiters") of Sir Alan Cobham's Circus, flown by Flt. Lt. Johnson, which carried a collection of Press representatives, and Miss Meakin's mother, brother and sister, we cruised round Heston for about half an hour until Miss Meakin and the towing Klemm with an escort of three privately-owned machines arrived.

After casting off the tow rope at about 2,000 ft. Miss Meakin looped six or seven times, side slipped steeply, and landed. Capt. Phillips will tow her glider when she demonstrates this summer with Sir Alan Cobham's Circus.

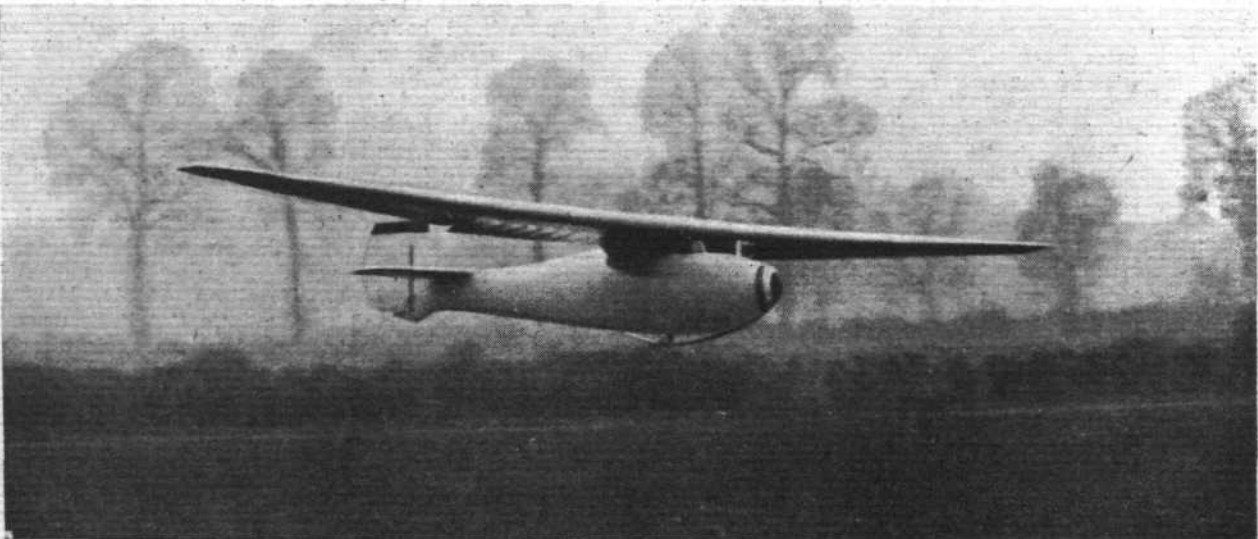
On inspecting Miss Meakin's "Rhonbussard" glider, we found it a really beautifully finished aircraft. The tare weight is 309 lb., disposable load 176 lb., and the maximum permissible gross weight 485 lb. The glider has been approved for towed starting, up to speeds of 50 m.p.h., for winch starting up to 50 m.p.h., and may be towed



"—SOMETHING DONE": Miss Joan Meakin in her "Rhonbussard" glider." (FLIGHT Photo.)

by aircraft up to 74.5 m.p.h. It has been approved for aerobatics. Provision is made in the cockpit for the pilot to wear a parachute.

According to reports which have appeared in the daily Press, during Miss Meakin's displays she will loop her glider continuously so long as there is sufficient room. Her performance will be given twice daily.



COMING IN: Miss Meakin landing at Heston after her flight from Lympne. (FLIGHT Photo.)



## A NEW LIGHT PLANE RECORD



The Caudron low-wing monoplane (150 h.p. Renault "Bengali") which has established a new record for two-seater light planes weighing less than 500 kg.

**A** NEW 100-km International Speed Record for light two-seater planes, weighing less than 560 kg (1,235 lb.) empty was established on the Etampes-la Marmogne course on March 31 last.

Flying a new Caudron two-seater, low wing, "sport" monoplane, Raymond Delmotte, the Chief Pilot of that firm, accompanied by his mechanic, covered the course of 100 km (62½ miles) in 20 min. 22 sec. at an average speed of 292 km/hr (181.4 m.p.h.), thus surpassing the existing international record of 269½ km/hr (167½ m.p.h.) made only on March 22 last by the Americans, Wright and Karl, who flew a "Monocoupe" monoplane (Warner "Scarab").

The Caudron plane flown by Delmotte in establishing this new record was a machine that had just been completed and had only been undergoing its trial tests for about a week. It is derived from the single-seater machines built especially to compete in the Deutsch Cup Race and is of wooden construction throughout. The plane was

equipped with a Renault "Bengali" 4-cylinder in line, inverted, air-cooled engine of 6.3 litres (385 cu. in.) cylinder displacement similar to the engine that was mounted on the Caudron single-seater plane that finished second in last year's Deutsch Cup Contest. This engine is rated at 130 h.p. with a maximum of 150 h.p. It was equipped in this recent record-making flight with a Ratier variable pitch propeller, adjustable in flight.

The main data concerning the new Caudron monoplane are as follows: Length o.a., 7.1 m (23 ft. 4 in.); wing span, 7.70 m (25 ft. 3 in.); wing area, 9 m² (98 sq. ft.); tare weight, 480 kg (1,058 lb.); fuel and oil, 130 kg (287 lb.); pilot and passenger, 180 kg (397 lb.); luggage 30 kg (66 lb.); gross weight, 820 kg (1,808 lb.); wing loading 90 kg/m² (18.4 lb./sq. ft.); power loading, 6.3 kg (13.8 lb. per h.p.); max. speed, 305 km/hr (189.5 m.p.h.); cruising speed, 270 km/hr (168 m.p.h.); landing speed, 95 km/hr (59 m.p.h.).



**RESERVED FOR THE AVIATOR:** Cloud effects such as these are often to be seen even in mid-winter, but usually it is necessary, as in the case of this de Havilland "Leopard Moth," to go to a height of more than 9,000 ft. to get into the sunshine. (FLIGHT Photo.)

# Airisms from the Four Winds.

## Rubin and Waller reach Australia

MR. B. RUBIN and Mr. K. Waller arrived at Darwin in Northern Australia on April 6, 15 days after leaving Lympe, which included two days' delay at Basra owing to passport difficulties. They were not out for any records, but nevertheless they have reached Australia in very good time. They intend going on to Melbourne, where they will stay a few days, and then return by the same route.

## Norman Watson expedition

THROUGH the courtesy of the Royal Canadian Air Force some very useful photographs have been obtained by the Norman Watson Expedition, which is to explore the Mount Waddington group of the Coast Range in British Columbia. These photographs are of the Franklin Glacier and the western side of Mount Waddington, and should contain information of great value to ski-ing parties.

## Miss Delphine Reynolds held up

MISS DELPHINE REYNOLDS, who is flying to Africa, has returned to Rome, after reaching Naples, owing to engine trouble.

## Another U.S. Army mailplane crash

WHILE flying over the Appalachian Mountains, an aircraft of the U.S. Army Corps, which was carrying mails, crashed from a great height. The pilot was killed.

## Survivor of Colombian crash found

ON March 10, a passenger aircraft flying between Quibda and Cartago crashed with six persons on board. One of these, Mr. N. C. Marshall, survived the crash and has been found wandering, exhausted, in the jungle. He was able to tell his rescuers where the machine had crashed.

## Woman's stratosphere attempt

MRS. JEAN PICCARD, wife of the twin brother of Professor Auguste Piccard, who, in August, 1932, reached a height of 10½ miles in a balloon, will, at Detroit this summer, make an attempt on the altitude record. She will be accompanied by her husband.

## Spanish air base in the Sahara

THE Spanish Government contemplates sending several aircraft and troops for the establishment of an air base at Ifni, in Spanish territory in the Sahara. Although this territory was granted to Spain in 1860, large areas are still unoccupied by the Spanish Army, and rebels escaping from the French zone seek refuge there.

## Agello waiting to break speed record

WARRANT OFFICER FRANCESCO AGELLO is waiting near Lake Garda for favourable weather, when he will try to break his record of 423.089 m.p.h. which he made there on April 10, 1933.

## Five "Chelyuskin" castaways rescued

TWO Soviet airmen, Kamanine and Molokov, flying in two machines, have rescued five more of the survivors of the wreck of the *Chelyuskin*. The rescuers flew to the Schmidt camp on the ice and returned with the rescued men to Cape van Karen.

## The Prince flies to Portsmouth

ON Saturday, April 7, H.R.H. the Prince of Wales flew to Portsmouth, where he had luncheon at Admiralty House with Admiral Sir John D. Kelly. The Prince left by air at 4 o'clock, accompanied by Lord Louis Mountbatten and Admiral Sir Lionel Halsey.

## Flying in the Canadian North

A PARADOX of the unusually severe winter experienced in Canada has been the popularity of flying as a means of reaching the mining districts in the Canadian northland. Not only has flying proved the only practical means of travel in some districts, but in others has on occasion been cheaper than travel overland. No fewer than four air services were operated from The Pas, the junction point of the Canadian National system, and the Hudson Bay Railway, and for years the recognised jumping-off place for mining prospectors. The aeroplanes are used for the transport of men and materials, including machinery.

## Solo at fourteen

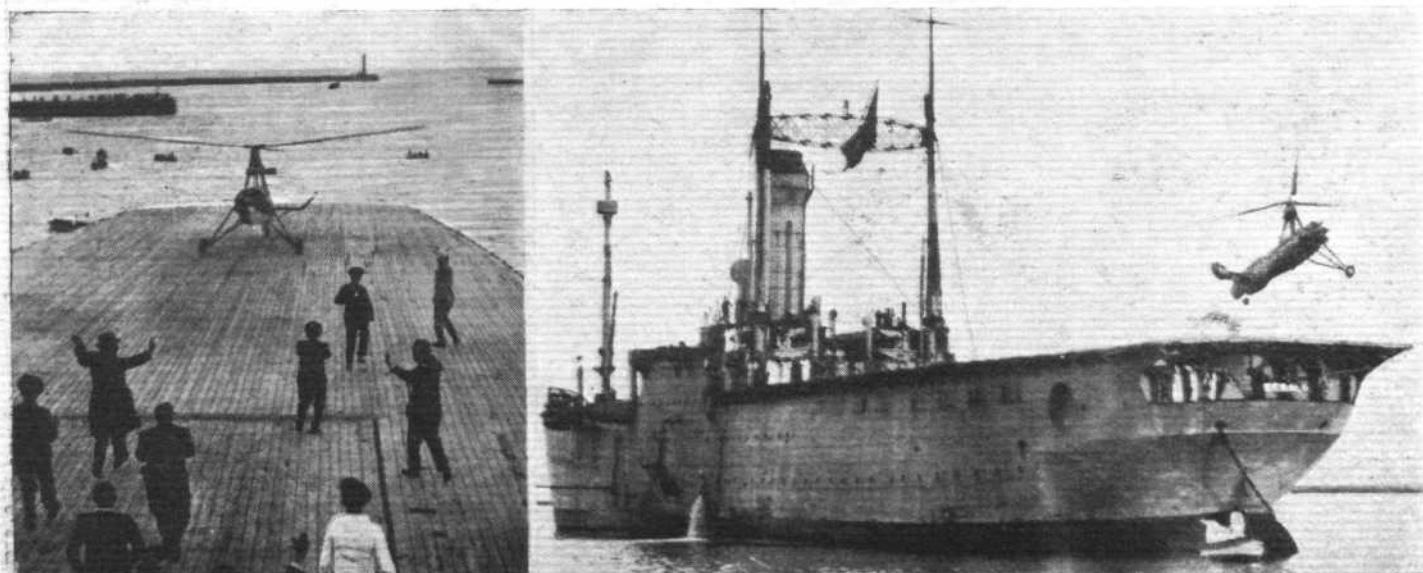
OID VICTOR OTTLEY, aged 14, flew solo at Abridge Aerodrome, Essex, on April 8, after receiving five hours' dual instruction from F/O. O. H. Snelling, of the East Anglian Aero Club. The flight lasted for about five minutes, and Master Ottley is reported to have made a perfect landing.

## New method of attack on locusts

MR. H. H. KING, a former chief entomologist to the Sudan Government, left London on April 6, for Northern Rhodesia, where he will perform experiments in attacking locusts with clouds of poison dust. Mr. King will use a D.H. "Hercules" belonging to Imperial Airways, which has been fitted with special apparatus developed by the R.A.E. for discharging clouds of sodium arsenite.

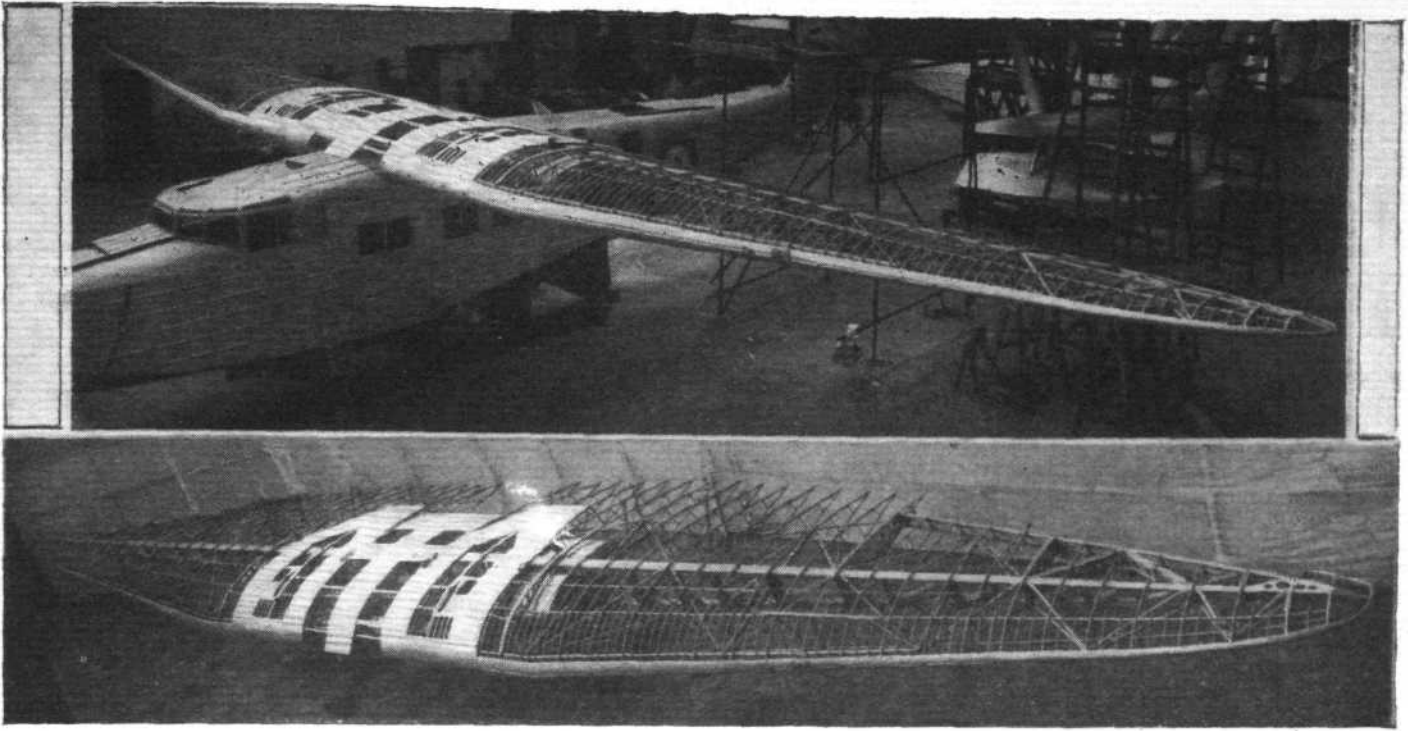
## German "air week"

A "PROPAGANDA WEEK," from June 1 to June 8, has been arranged in Germany by Capt. Loerzner, the President of the German Air Sports Association. Every available aircraft will be put into the air, and machines will fly over districts where, in the ordinary course of events they are rarely seen. On June 2 and 3 a collection will be made throughout the country for "German Air Sport," and the *Graf Zeppelin* will make a tour. A glider will be released from the airship over Berlin.



A NEW STYLE OF DECK FLYING: As previously reported in "Flight," Mr. de la Cierva recently alighted on, and afterwards took off from, the small Spanish seaplane transport, *Dedalo*, on his C.30P Autogiro. Here we see both phases of this demonstration.





**LIGHTER CONSTRUCTION:** These two views show the Saro "Cloud," for which a Monospar wing has been built. As can be seen, the wing is heavily tapered, and the result should be an increase in performance.

### Glider training for U.S. Navy pupils

LAST spring the U.S. Navy acquired two Franklin Utility gliders for trials. It has now been made known that, from next June, at the U.S. Naval Air Station, Pensacola, flying instruction will be given on gliders to half the new pupils. The Navy Department intends to find whether a student thus trained will learn more rapidly, whether the cost of instruction will be less, and if more skilful pilots will be produced.

### A Couzinet racer

If many more machines are built for the MacRobertson race, and are entered (so far only one entry has been received), special traffic regulations will have to be drawn up for the event. The latest addition to an already large crop of possible entries for the race is a low-wing Couzinet. This machine is to be fitted with a single Hispano-Suiza 9V engine of 575 h.p. At a total weight of 8,284 lb. it is estimated that the top speed will be 261 m.p.h., and that the range will be 4,970 miles.

### New office for General Valle

GEN. GIUSEPPE VALLE, the Italian Under-Secretary of State for Air, has been appointed to the office of Chief of Staff of the Italian Air Force. Before receiving his appointment as Under-Secretary of State for Air, Gen. Valle had, for four years, held the position of Chief of Staff of the Air Force under H.E. Air Marshal Italo Balbo.

### King of Siam in Rome

THEIR MAJESTIES THE KING AND QUEEN OF SIAM visited the Italian Air Ministry in Rome on March 29. They were received by Gen. Valle, Under-Secretary of State for Air. Later the Royal party witnessed a display by military aircraft at the Giampiano-Nord aerodrome.

### Wiley Post prepares

WILEY POST, famous for his round the world flight, is working on his Lockheed "Vega" ("Wasp") *Winnie Mae*. He is installing a Westport radio receiver.

### The strength of air forces

"LUFTWEHR," the German aeronautical publication, gives the following statistics on the equipment of air forces. The list was compiled on January 1, 1934. France has 1,857 aircraft, Great Britain 1,141, Italy 1,206, Poland 602, Czechoslovakia 410, Russia 2,200, Belgium 162, Poland 321, Switzerland 246, Spain 600, Yugoslavia 470, Rumania 900, U.S.A. 3,058, Japan 2,050, Sweden 154, Norway 117 and Denmark 118.

### Cancellation of Heston Navigation Trials

NOTIFICATION has been received that the directors of Airwork, Ltd., have abandoned the idea of holding, at Heston, that event formerly known as the *Morning Post* Cross-Country Air Race and now called the Heston Air

Navigation Trials. The directors consider that it is not in the interests of the commercial aircraft operators at Heston that flying meetings and air displays should be held at Heston Airport. That these trials should thus be abandoned seems to us a great pity. Admittedly the work of organisation is large and the number of observers required is considerable, but we have always felt that this race was one which did more than almost any other to foster the true sporting spirit amongst private owners as well as rewarding those who had thoroughly learnt their job as pilots. The Royal Aero Club is the controlling body of all sporting flying in this country; surely, therefore, this is just the sort of trial which they ought to run. It is worthy of being perpetuated as a National event, for which perhaps some of the trophies held by the Royal Aero Club that have not been competed for for some years might be awarded. We hope that it will be found possible for the club to keep this event going.

### The fifteenth Royal Air Force Display

THE fifteenth Royal Air Force Display will be held at Hendon on Saturday, June 30. This date is a week after the Ascot Meeting and a few days before Henley Regatta.

### A gliding record

HIRTH AND RIEDIL, two Germans, have set up, in the Argentine, a new distance record for gliders with a flight of 165 miles.

### Airship port for Rio

THE Brazilian Government has issued a decree opening a special credit of 11,000 contos of reis for the construction of an airport at Rio de Janeiro. This move is in fulfilment of a contract signed by the Luftschiffbau Zeppelin and the Government for an airship service between Europe and Brazil.

### A "Courier" in India

AN Airspeed "Courier" (Siddley "Cheetah"), the demonstration machine belonging to R. K. Dundas, Ltd., the Indian agents for Airspeed, Ltd., was recently chartered by the Viceroy of India for a trip from Delhi to Patna and back. The total distance is about 1,100 miles. The journey was completed without incident, although stormy weather was encountered and the machine operated at Patna from a small landing ground. Owing to the nature of the trip, before the flight could be made, the machine had to be inspected by the Chief Civil Aircraft Inspector, who commented on the exceptionally good condition of the aircraft. This is interesting, as the machine has flown for about 200 hours since it left this country on December 19 last year.

### French admiral killed in crash

REAR-ADMIRAL MARTIN was trapped beneath a seat and drowned when a Schreck amphibian capsized in the Seine. According to one report, the crash was caused by the land undercarriage which had not been retracted in time.

# Airport News.

## CROYDON

**I**N various newspapers last week it was announced as something of a novelty that when the summer programme of the German company comes into force on May 1 it will be possible to fly from Berlin to London and back in a day. In a sense this is something new, but ever since March 1, and throughout last summer, a daily return service between London and Berlin has been operated by K.L.M. That is to say, Berlin-London return in the day is something new, but London-Berlin and back in the day is an old-established service. By the new D.L.H. service passengers will be able to leave the German capital at 7 a.m., reach London well before noon, leave again at tea time and arrive in Berlin about dinner time. In the opposite direction, by K.L.M. one may do practically the same thing any day, leaving Croydon at 7 a.m.

The earlier official inauguration of "summer time" in France this year has played queer tricks with air traffic. At the moment there is one hour's difference between French and English clocks. An Air-France machine did the journey from Paris in 28 minutes *by the clock* the other day and the change in time has necessitated keeping an extra Imperial Airways machine in Paris. Although the Imperial machine leaves Croydon at the usual time, it arrives at Le Bourget at 12.45 p.m. French summer time instead of at 11.45 a.m. This means it cannot, as it used to, return on the 12.30 p.m. departure from Paris to London.

Midland & Scottish Air Ferries, Ltd., whose services from the North of England were recently inaugurated, will not make their London terminus at Croydon as previously announced, but at Romford. By doing this a number of important Continental connections will not be made, but in other ways it may be a good thing if some of the internal air line companies make their terminus elsewhere than at Croydon. In the past, traffic congestion in bad weather has been complicated by privately-owned and other non-wireless machines, but a new era has now dawned in which the multiplicity of air lines radiating in all directions will cause a new traffic problem. No doubt it will be compulsory eventually for scheduled aircraft on regular routes to carry wireless, whatever the size and capacity of the machine, but at present this is not so.

Olley Air Services, Ltd., continue to do brisk business. A "Cruiser" of Spartan Air Lines, Ltd., was seen at Croydon recently undertaking a charter which Olley Air Services, Ltd., had to sub-let owing to pressure of other work.

Queer cargoes have been coming into the Airport during the last week. From Hamburg D.L.H. had a consignment of 300 tropical fish. When examined at Croydon it was found that the numbers had increased considerably, and it is a moot point whether the new comers were born over England, in which case they would not be liable to import duty presumably, and might even be classed as British subjects. From Paris Imperial Airways, Ltd., brought 1,000 day-old chicks, which had their first meal in England. Day-old chicks do not need food for the first 24 hours of their life, but need expert attention when they do feed. Sometimes a foster-mother is necessary to teach them how to pick up their first meal. Hence air transport is invaluable in the particular traffic. Plovers' eggs, which cannot normally be obtained for love or money in London, are imported to individual gourmets and to the big clubs at this time of year. Most of them come from Holland by K.L.M. They must not be consigned to shops or hotels for sale to the public, apparently.

Amongst notable travellers by "Air-France" last week were Mr. Jeff Dickson, M. Georges Carpentier, and two other boxers. It seems that Carpentier is to give some exhibition boxing in this country. Mr. Jeff Dickson is a regular "Air-France" traveller and has season tickets for some of his boxers.

The new D.H. 86 class of four-engined aircraft ordered by Railway Air Services, Ltd., will be known, I am told, as the "Diana" class. Names already selected are *Dione*, *Daphne*, *Doris*, *Delia*, *Dryad*, *Dorade*, *Draco*, *Delphinus*. *Draco* is definitely suitable, meaning Dragon, and *Dryad*

is a nice name for an aeroplane of graceful lines. Some of the others, I fear, may lead to ribald comment.

A letter to Imperial Airways, Ltd., Brindisi, commenced as follows: "Dear Sir,—Will you please let me know if the four motors for India fly out every Monday morning?" In the very early days cases were known of engines flying out and landing in ploughed fields, but this never happened to Imperial Airways, Ltd. If four motors flew out on a Monday with regularity, it would mean something a little wrong with the week-end organisation.

Imperial Airways Rugby Football Team, which has just been formed, lost to a London-Irish Team on Saturday, April 7. It was their first match, and experts predict great things of the team after a little practice. The team included several first officers. It was as follows: James, Watts, Edwards, Gore-Clough, Cole, Morrissey (capt.), Headon, Dovey, Stewart, Whitfield, Coussens, McNichol, Gorton, Bates and Pitts. The staff were requested to give their support at the ground, where there was a fully-licensed pavilion. Admirable adjunct to a pure enthusiasm for the sport.

"A. VIATOR."

## HESTON

**T**HE Easter week-end of Thursday to Tuesday inclusive brought a spate of traffic. Jersey Airways carried during this period 130 passengers in 39 single journeys. The 11.30 service on Friday and the returning service which arrived at 5.30 on Monday both ran in triplicate, and duplicate services were the rule rather than the exception. Even now, after the close of the Easter holidays, most of the Jersey services continue to be doubled.

Mr. Vernon Bartlett travelled by air to Jersey and back for the Easter week-end.

B.A.N.C.O. carried 100 single-journey passengers between Heston and Le Touquet, using both their three-engined Ford and their D.H. "Dragon." Eight thousand one hundred and twenty-six miles were flown on this route from Thursday to Tuesday inclusive, and several relief services were necessary.

Wrightson & Pearse also operated services to Le Touquet at Easter. Using a D.H. "Dragon," they carried 37 passengers, or 70 per cent. of their total capacity.

An urgent telephone call was received by the Traffic Office at 7.30 p.m. on April 2, requiring the immediate transport of five people to Paris. Arrangements were made with B.A.N.C.O. to take the party. It was decided to use the Trimotor Ford and carry both a spare pilot and a wireless operator. The party left at midnight. They returned by "Dragon" on Wednesday, April 4.

Another Spartan "Cruiser" left Heston for Yugoslavia on April 5, in the hands of Mr. Vladimir Strizewski. He is a staff pilot of the Aeroput line, and it will be remembered that he flew a similar machine out to them on September 25 last year.

Two Spartan "Cruisers" for Czechoslovakia left Heston on March 8, for delivery to Messrs. Bata of Zlin.

Mr. A. B. Gibbons, well-known Klemm owner, made an Easter excursion to Barcelona. Leaving Heston on March 30, he arrived home on April 2, having made the return journey from Barcelona in a day.

March flying hours in the Airwork School show a 71 per cent. increase over the same period last year. There were 27 fine days, as against 24 in March, 1933.

At 2 p.m. on Easter Sunday, Birkett Air Service received a telephone call from Brooklands race-track requesting them to collect a supply of motor spares and fly them immediately to Mr. Whitney Straight, the pilot and racing motorist, at Monte Carlo. Mr. L. H. Stace left at once in a "Puss Moth," picked up the spares at Brooklands, cleared Customs at Lympne, arrived at Lyons at 6.45 p.m., Marseilles at 11.30 p.m. and left there at midnight in a taxicab, which conveyed him 150 miles through the mountains to Monte Carlo.

Shell Aviation News reports that Sir Pyers Mostyn, who flew his new "Leopard Moth" from Heston to Kenya last June, is scheduled to leave Nairobi on April 15 for



England. He will follow the Imperial Airways route to Cairo, continuing via Damascus, Aleppo, Istanbul, Bucharest, Belgrade, Budapest, Vienna, Munich and Cologne to Heston. He will be accompanied by Maj. Grogan and Mr. Hoogterp, a local architect. For some six years now Sir Pyers Mostyn has used his own aeroplane to fly between England and South Africa, following a variety of routes, including one down the West Coast of Africa and across the French Sudan, and another via the East Coast through Abyssinia and Somaliland.

Also, we hear that Sqd. Ldr. F. O. Soden is flying from Palestine to Heston in his "Puss Moth," leaving in the middle of April. He is flying via Bengazi, Tripoli, Biskra, Fez, Marrakesh, Tangier, and through Spain and France.

## CARLISLE

THE Carlisle Municipal Aerodrome has now been licensed by the Air Ministry and is ready for use. In celebration of this event, and through the generous offer of Mr. Harold Carr, J.P. (Chairman of Directors of Carr & Co., Ltd., biscuit manufacturers, Carlisle), a special aeroplane was chartered to convey a civic party from London to Carlisle. The party consisted of the Mayor of Carlisle (Mr. Councillor E. Gray), Mr. Harold Carr, J.P., Mr. Alderman Thompson, J.P., Mr. Councillor Lightfoot, the Town Clerk (Mr. F. G. Webster), the City Treasurer (Mr. E. Lund), and the City Surveyor (Mr. Percy Dalton).

The party left Croydon on the morning of Wednesday, March 21, and arrived at the Ronaldsway Aerodrome, Castletown, Isle of Man, at 1 o'clock, where they were received by the Mayor of Douglas (Mr. Alderman J. H. Skillicorn, J.P.) and members and officers of the Douglas Town Council. Leaving Castletown at 2.50 p.m., they arrived at the Aldergrove Aerodrome, Belfast, at 4 o'clock and were welcomed by the Lord Mayor of Belfast (Sir Crawford M'Cullagh, D.L., J.P.), the High Sheriff and members of the Corporation, at the City Hall, Belfast. Leaving the Aldergrove Aerodrome at 5.30, the party arrived at the Carlisle Municipal Aerodrome at 6.40, where members of the Air Base Committee were in attendance, and at the request of the Chairman (Mr. Councillor J. G. Dalton) the Mayor of Carlisle officially declared the aerodrome open for use.

By these arrangements it is interesting to note that it was possible for the flying party to have breakfast in London, lunch in the Isle of Man, tea in Belfast, and dinner in Carlisle, within a period of 12 hours in one day.

On the following day (Thursday, March 22) members of the Air Base Committee flew from the Carlisle Aerodrome to London, calling at Speke Aerodrome, Liverpool. They were entertained to luncheon at the Town Hall by the Lord Mayor of Liverpool (Mr. G. A. Strong).

The geographical position of Carlisle will, it is felt, play an important part in the development of air services between Scotland and England and between Ireland and the East Coast of England and the Continent.



## G.A.P.A.N. display cancelled

WE are informed that the Guild of Air Pilots and Air Navigators of the British Empire have decided to cancel the proposed Garden Party fixed for May 21 next.

## Forum Club aviation exhibition

A MOST interesting aviation exhibition was held by the Forum Club from April 7 to 10. The exhibits were arranged by the aviation section of the club, and among those on the Committee are Mrs. de Havilland, Mrs. Norman, Mrs. McClure, Miss Rosalind Norman, Mrs. C. G. Grey. The exhibits included a large number of models from the works of Miss Norman, photographs from Aerofilms, Ltd., a wireless set from Marconi, Ltd., a section of the fuselage of D.H. "Leopard Moth," models from Supermarine Vickers, a "Gipsy I" engine, models lent by the Prince of Wales, exhibits arranged by the Automobile Association, Imperial Airways, Rumbolds, Ltd., and the aviation, technical and general Press, a Reid & Sigrist "Reaction Box" and many other items too numerous to

## AIRPORT ACTIVITY

ACTIVE measures are being taken by the Belfast Harbour Commissioners with a view to establishing an airport at Sydenham, about two miles from the centre of the town. More than 100 acres of land have been reclaimed from the river and already the site has been used by aircraft. Flying boats as well as land machines will be able to use the airport.

At a Ministry of Health inquiry held in Christchurch recently the question of the provision of an aerodrome at Mudeford Farm, Christchurch, was discussed. The inquiry was held as a result of an appeal by Mr. F. C. Fisher against the refusal of the Town Council to grant permission for the construction of an aerodrome.

At a recent meeting of the Gloucester City Council, it was decided to obtain provisional contracts for the purchase, by the Corporations of Cheltenham and Gloucester, of an aerodrome site at Staverton, approved by the Air Ministry for an "all type" licence, at prices not exceeding a total of £11,000.

The Aerodrome Committee of the West Hartlepool Town Council has inspected several sites for aerodromes and it is understood that a site at Greatham has been favoured.

On April 3, Jersey States decided to acquire 70 acres of land, which has been approved by the Air Ministry, at St. Peters, Jersey, for the construction of an aerodrome. The cost will be about £20,000.

Work is in progress on the construction of an aerodrome at Newtownards, County Down, on the estate of the Marquess of Londonderry. This, the first civil aerodrome in Ulster, will be operated by Airwork, Ltd. When completed the aerodrome will be used as the Northern Ireland terminus of the Glasgow-Belfast service of Midland & Scottish Air Ferries, Ltd.

The application by the Ramsgate Corporation to the Ministry of Health for powers to borrow £9,000 to purchase land at Rumfields for a municipal aerodrome has been the subject of much controversy between the Ramsgate Corporation and the Broadstairs Urban District Council.

The Town Clerk of Wolverhampton reports that the Corporation is reserving 178 acres of land at Barnhurst for a municipal aerodrome. Mr. Howard Thomas is of the opinion that Barnhurst is not an ideal site. To his mind the site chosen by the Air Ministry and by Sir Alan Cobham at Perton would be more suitable from several points of view.

## A NEW LONDON AIRPORT

HILLMAN'S AIRWAYS will shortly be operating from a new and very extensive aerodrome a mile or so north-east of Abridge in Essex. When this new aerodrome is ready the present one at Romford will be retained for joyriding only. The new aerodrome may be called London-East Airport and will be the terminal airport for all the air lines operated from the North of England by Midland & Scottish Air Ferries, and possibly by other companies. Although well out in the country, the aerodrome is an easy 40-minute car drive to King's Cross. During a recent visit we saw that work was progressing fast and the aerodrome should be ready for use in about three or four weeks' time. It adjoins the main road between Wanstead and Ongar (A 113), and should, when finished, be one of the largest and most attractive aerodromes east of London.

mention. This exhibition is the first of many which it is hoped to arrange with a view to making members of the Forum Club, as well as others, alive to the interest of the air.

## At Olympia

APART from the "Staybrite" exhibits to which we refer under a separate heading, there is a great deal to interest anyone who is air-minded at Olympia this year. The Post Office have a "Telephone Terrace" which displays to advantage the chief features of the air mail; the British Thomson-Houston company show their many kinds of electric lamps; Boulton & Paul their sheds and bungalows; the Portsmouth and Southsea Corporation have a sort of diorama of the Portsmouth Airport in their exhibit extolling the beauties of their city for holiday-makers; Dunlops have a wide range of their Dunlopillo cushioning; and the Pressed Steel Company, the holders of the British rights for the Budd Shot Welding process, are showing their new range of refrigerators.

## SOME AMERICAN AIRCRAFT

## The Vought "Corsair"

ONE of the most versatile two-seater military aircraft produced in the United States is the "Corsair" manufactured by the Chance Vought Corporation at East Hartford, Connecticut, where its factory is adjacent to the plant of the Pratt & Whitney Aircraft Company and the Hamilton Standard Propeller Company at Rentschler Field. The "Corsair" is produced as a landplane or seaplane for the U.S. Navy and for the governments of many foreign countries. For the U.S. Navy the production types include the "Corsair" SU-2 and SU-3 scouting aircraft powered by the Pratt & Whitney "Hornet" and the O3U-3 observation machine, which is fitted with a "Wasp." The latter type is readily convertible from landplane to seaplane or *vice versa*, and may be operated from land, water, catapult or aircraft carrier. Recent deliveries to the U.S. Navy include the first of a new series of scouting machines now in production and two experimental types.

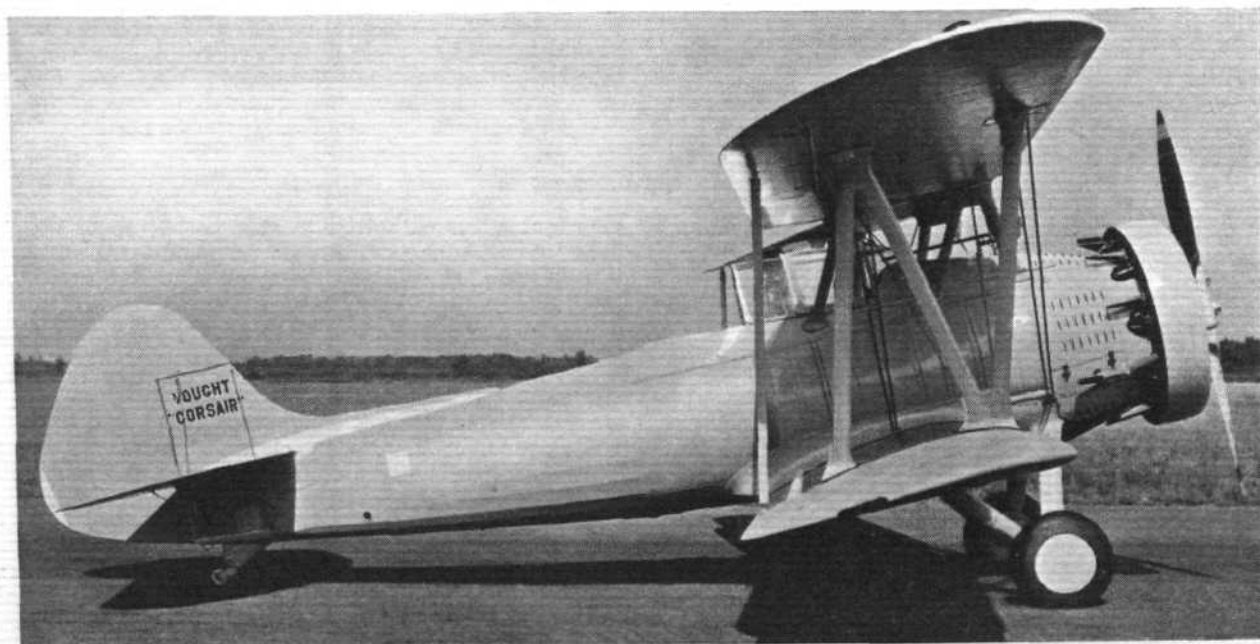
For export the company has produced the V-80 single-seater and the V-90 two-seater "Corsair." Both these aircraft are of essentially similar design, both may be provided with one of several engines, and both are convertible landplanes or seaplanes. These types were in production for foreign governments during 1933, and "Corsairs" are also in service in the Argentine, Brazil, China, Cuba, Japan, Mexico, Peru and San Domingo. It may be remembered that the British Air Ministry has purchased a Vought "Corsair" as a representative type of American military aircraft. The following description applies to both the models SU-1 and SU-2 observation machines.

It is an equal span type biplane with heavy stagger and swept-back wings. Interplane bracing consists of metal "N" struts and streamline wires. The wing spars are routed spruce, the ribs are spruce and plywood, the leading edge is plywood and the covering is fabric. Balanced ailerons are fitted to all four planes. The fuselage is a welded chrome molybdenum steel tube structure

with quickly removable metal cowlings forward of the cockpit and beneath the fuselage. The remainder of the covering is fabric over spruce fairing strips with metal doors for inspection. The *empennage* is of welded steel tubes covered with fabric. The tail plane is adjustable from the pilot's cockpit, the rudder is balanced, and the fin is adjustable on the ground to compensate torque.

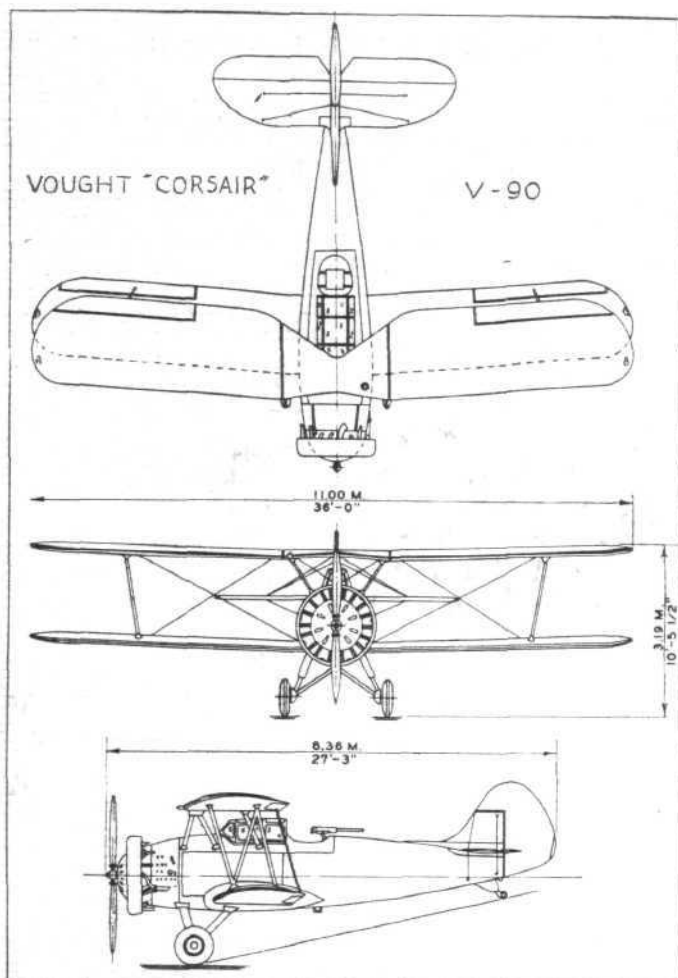


VOUGHT CORSAIRS IN FLIGHT



THE VOUGHT "CORSAIR" V.90: Note the "cabin" top over the cockpits. This feature is to be found in many modern American two-seaters.





The undercarriage is of the cross-axle type, which is quite unusual in modern American military types. Bendix wheels and individually operated brakes are fitted. A swivelling tail wheel fitted with an oleo leg is provided and may be locked in a fore and aft position from the pilot's cockpit.

A Pratt & Whitney "Hornet" giving 600 h.p. at 2,100 r.p.m. at sea level is fitted. A low drag cowling ring and Hamilton-Standard metal airscrew are usually fitted. The two main fuel tanks, with a total capacity of 130 U.S. gallons, are faired into the sides of the fuselage.

The pilot's seat is adjustable vertically for vision, and the rear seat is arranged to stow forward on rails when the observer is using the rear gun. Dual controls are provided, the rear control column being removable. The pilot is armed with a fixed Browning gun in the starboard side of the top centre section. This gun fires outside the airscrew arc, so that no synchronising gear is required. Bomb racks may be fitted under the lower planes. Wireless transmitting and receiving apparatus and the usual signalling equipment carried in observation machines completes

the military load. The following are the main data applying to the aircraft.

Span	...	36 ft.
Length	...	27 ft. 3 in.
Height	...	10 ft. 8 in.
Wing area	...	325.6 sq. ft.
Max. speed (landplane)	...	170.5 m.p.h.
Landing speed	...	60 m.p.h.
Se.vice ceiling	...	20,500 ft.

#### The "Corsair" V-90

The V-90 export machine is similar in general design to the "Corsairs" used by the U.S. Navy. As the result of a large number of detail refinements, the machine possesses greatly improved performance characteristics. Among the new features are a cabin top for the cockpits, streamline wheels and tyres, new tail surfaces, larger fuel tanks, improved tank suspension and new engine installation. Any one of the five Pratt & Whitney "Hornet" series of engines, ranging in power from 525 h.p. to 675 h.p., may be fitted. Equipment for observation, "attack," fighting, light bombing or long-range scouting may be provided. Whatever the duty, the machine may be used as a landplane or seaplane. The guaranteed performance of the V-93, one of the V-90 series, which is powered with the "Hornet" S.D. engine, is given below.

	Landplane.	Seaplane.
Speed at 6,000 ft.	... 184 m.p.h.	179 m.p.h.
Speed at sea level	... 169 m.p.h.	164 m.p.h.
Climb in 10 min....	... 13,000 ft.	12,200 ft.
Service ceiling	... 23,700 ft.	22,600 ft.
Cruising range at 6,000 ft. (max. fuel load)	... 709 miles	685 miles

#### The Curtiss-Wright "Condor" BT-32 Bomber

FINAL test flights have been completed with the Curtiss-Wright "Condor" bomber which Com. Frank Hawks is soon to demonstrate to the Chinese Government. This aircraft has been developed from the civil type "Condor," 32 of which were sold to air line operators in the U.S. and Europe during 1933.

Welded chrome molybdenum steel is used for the fuselage, which is faired to streamline section and covered with fabric. The upper wing includes a centre panel which holds four 75-gall. fuel tanks and two outer panels. The wing construction is of welded chrome molybdenum steel tubing. Two spars of the Warren truss type with heat-treated flanges are used. The drag struts are of similar construction, and are bolted to the main spars. Ribs are of duralumin tubular construction and are placed approximately 10 in. apart. N.A.C.A. 2412 aerofoil section is employed. Frise type ailerons of high aspect ratio run for the full span of the upper outer wings, and are fitted with small adjustable auxiliary surfaces for any minor adjustments. In the wing and tail surfaces there are 125 inspection openings. The entire tail assembly, including tail plane, elevator, fin and rudder, is adjustable for incidence as a complete assembly. Connection between the



FROM PLOUGH-SHARE TO SWORD: The Curtiss-Wright "Condor" Bomber, developed from the commercial transport "Condor."

tail unit and the fuselage proper is by hinged Fafnir ball bearing units at the end of the upper longerons. All control surfaces are balanced.

In the extreme nose of the fuselage is the pilot's cockpit, which is fitted with adjustable windows. Tinted glass in the roof of the cockpit adds to the comfort of the occupants by eliminating glare. Included in the very wide range of instruments which is provided is a Sperry Artificial Horizon and a Sperry Directional Gyro. Two landing lights and one red fog light are located in the nose of the fuselage. Two Wright "Cyclone" R.1820 F.2 geared engines, developing 700 h.p. at 1,950 r.p.m., are fitted. N.A.C.A. cowlings are used with improved nacelles which extend 1 ft. to the rear of the trailing edge of the lower wing. Two Curtiss electrically operated controllable-pitch airscrews, which have a diameter of 11 ft. 10 in., are fitted.

It is claimed that this bomber is the largest land plane in the world equipped with a full retractable landing gear. This gear, when extended, has the appearance of a conventional fixed type undercarriage. There are three main members and only one of these is affected by the retraction. Only 28 sec. are required to retract or lower the undercarriage. In addition to the electrical drive there is an individual mechanism which may be operated manually by the pilot.

The unusually large fuselage of the "Condor" bomber enables the aircraft to be used as a bomber, troop carrier or ambulance. Approximately 4,000 lb. of bombs may

be carried, two 1,100-lb. bombs in a compartment in the fuselage and the remainder beneath the lower wings. The heavier bombs are hoisted into place by a special Curtiss-Wright device. Five 0.30 calibre machine guns are carried, one in a turret in the top of the fuselage over the pilot's compartment, another midway between the trailing edge of the upper wing and the tail, one in the bottom of the fuselage and one on each side of the fuselage projecting through a sliding window. The bomber's compartment is located to the rear of the seat for the second pilot in the bottom of the fuselage. When used as an ambulance the machine will carry 12 stretchers. A large door is provided so that the wounded may be carried in and out of the machine with the greatest of ease. As a troop carrier it is equipped with benches and cushions for 24 soldiers with full field equipment. Lavatory accommodation is provided.

Our readers should not confuse this aircraft with the old Curtiss "Condor" bomber which, for years, has been a standard type in the U.S. Army Air Corps.

#### THE CURTISS WRIGHT "CONDOR" BT-32 BOMBER

Span .. ..	82 ft. (25m)
Length .. ..	49 ft. 11 in. (15.1m)
Height .. ..	16 ft. 3 in. (4.9m)
Initial rate of climb ..	over 1,000 ft. per min. (304.8 m/min.)
Service ceiling .. ..	over 20,000 ft. (6 096 m)
Top speed .. ..	over 180 m.p.h. (290 km/hr.)
Take off with full load ..	16 sec.

## EMPIRE AIR DAY

**T**WENTY-TWO aerodromes in different parts of the country announce the provisional arrangements they have made to mark Empire Air Day on Empire Day, May 24. The suggestion that Empire Day should in future be also Empire Air Day was put forward by the Air League in February. It has met with an enthusiastic response on the part of many flying clubs.

The provisional programmes of the twenty-two aerodromes are as follows:—

**Barton Aerodrome** (Manchester) will be open to the public until dusk. Joy rides will be given and there will also be aerobatic displays. Hangars, machines and workshops will be open to public inspection.

**Yeadon Aerodrome** (between Leeds and Bradford) will provide interesting air displays with probably 13 machines. Joy flights will be given and the aerodrome will be open to public inspection.

**Sherburn Aerodrome** (at Elmet, Yorkshire) will be open to the public and flying displays will be given all day.

**Squire's Gate Aerodrome** (Blackpool) will be open from 2 p.m. until dusk. Special cheap joy flights (1s. 6d. for children and 2s. 6d. for adults) will be given. These will be made in eight- and four-seater machines. Demonstrations of parachute jumping and aerobatic displays will be further attractions.

**Liverpool Aerodrome** (Hooton) will be open from 2 p.m. until dusk. It is hoped to arrange for public flights and for flying demonstrations by club members. The club authorities are also anxious to welcome parties of school-children.

**London: Hatfield Aerodrome** (Hertfordshire), belonging to the London Aeroplane Club, will be open to the public all day. The hangars and machines will be open to inspection, and joy rides will be given throughout the day on club machines.

**High Post Aerodrome** (Middle Woodford, Salisbury) will be open to the public and joy rides will be given. Ten aircraft are available.

**Sywell Aerodrome** (Northampton): Joy rides will be available to the public, who will also be able to inspect the club machines and hangars.

**Meir Air Station** (Stoke-on-Trent): The headquarters of the North Staffordshire Aero Club will be open for joy rides.

**Bekesbourne Aerodrome** (near Canterbury, Kent) will be open in the afternoon and joy rides will be given. There will also be a number of free flights for the public. There will be a flying demonstration by an Autogyro machine.

**The Cotswold Aero Club** (Gloucester): The aerodrome

will be open from 2.30 p.m. until 9 p.m. There will be a number of free joy rides.

**Brooklands Aerodrome** (Surrey), of the Brooklands Flying Club, will open from 9 a.m. until dusk. Six free joy rides—to be balloted for—will be available. The public will also be able to make a tour of inspection of the aerodrome.

**Leicester Aerodrome**: As the Leicester Municipal Aerodrome will not be ready until July 7, the public will be admitted to the private aerodrome of Mr. W. L. Everard, M.P., at Ratcliffe, near Leicester. There will be demonstration flights and the public inspection of machines and hangars.

**Grimsby Aero Club** (Lincolnshire) will open its aerodrome at Cheapside, Waltham, to the public and give demonstrations of the training of pilots.

**Eastleigh Aerodrome** (Hampshire), of the Hampshire Aeroplane Club, will be open from 2 p.m. onwards. Joy rides will be available. The club's President is Commander Lord Louis Mountbatten, K.C.V.O., R.N.

**East Anglian Aero Club's** grounds at Abridge, Essex, will be open to the public and flying demonstrations will be given.

**Castle Bromwich** (Birmingham) grounds of the Midland Aero Club will be open to the public, who will be able to see the machines and hangars and flying demonstrations.

**Reading Aero Club** is opening its aerodrome at Woodley to the public. Flying displays will be given.

**Oxford Aerodrome** (Witney), of Universal Aircraft Services, will be open to the public, who will be able to see how an aeroplane is constructed, and also the latest method of instructing pilots.

**The Agra Engineering Company of Teignmouth** (Devon) is co-operating with the Air League.

**Pengam Moors Aerodrome** (Cardiff) will be open from 10 a.m. until dusk. Joy rides will be available and the public will also be admitted to the hangars and workshops. Flying displays will be given.

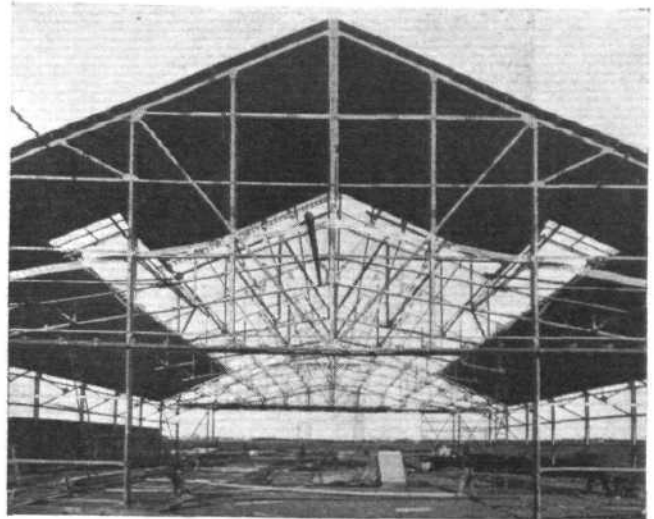
**The Flying School at Newmarket Road** (Cambridge) will be open and joy rides given. The workshops will also be available for inspection.

Details of the programmes of still other aerodromes will be disclosed shortly.

An indication of the interest which the proposal to hold an Empire Air Day on May 24 has aroused throughout the Empire is given by the messages of approval which the High Commissioners for Canada, India and Newfoundland, the Acting High Commissioner for Australia and the Official Secretary to the High Commissioner for Southern Rhodesia have just sent to the Air League of the British Empire, the organisers of Air Day.



# The Industry.



**IN SKELETON :** On the left the new 550 ft. long hangars which are being erected for Hawkers, at Brooklands, will have two clear 100 ft. openings ; these are being erected on the site of the old wooden hangars, which might well be termed the cradle of British aviation. On the right is the new hangar at Heston, and through it, in the background, can be seen the huge gasometer, which is a landmark of this aerodrome. (FLIGHT Photos.)

## HOUSING AIRCRAFT

ONE of the most important items of aerodrome equipment is the hangar accommodation. Sometimes authorities responsible for aerodromes take the view that they must have the largest and latest thing in hangars regardless of whether they are likely to get the traffic to warrant it. This has on occasions been the result of saddling municipal authorities with a weight of capital invested in their airport which is not likely to show them a return for many years. When such a state of affairs has arisen, those on that airport committee are apt to become despondent about the future of air transport, because the money they invested in, say, for example, an artificial pond in which children can sail their boats, shows an immediate return, whereas they get little or nothing out of that which they put into the airport. Far too many municipalities have, in our opinion, taken this grandiose view.

They would have been better advised to have built small, to start with, on a properly co-ordinated plan, which would have allowed them inexpensive expansion as the traffic grew. This would have allowed them to have the latest and most suitable equipment at all times.

Another point to be considered when buying hangar and housing equipment is the firm from whom it is obtained. A firm which has a wide knowledge of all matters appertaining to aviation as well as to buildings is certainly most likely to provide what is most suitable, and just such a firm is Boulton & Paul, Ltd., of Norwich. They have erected hangars at many of the aerodromes in England as well as abroad. Above are shown hangars in the course of erection at Heston and Brooklands, and similar ones have been put up at Hamble, Cowes, Romford, Portsmouth, etc.

## STAYBRITE

STAINLESS steel is already widely used for those parts of aeroplane structures where corrosion is likely to take place and the name of Thomas Firth & John Brown, Ltd., has become almost synonymous with this metal. A visit to their works at Sheffield is therefore of great interest. It would be impossible to describe the whole process of manufacture in an article like this, but we cannot pass without referring to some of the many things we saw. For example, the metal starts life when it is first put into a large electric furnace and wherein all the various ingredients are melted down together. Firths use one of the largest electric furnaces in Europe for this work, and the one out of which we saw a glowing stream of stainless steel being poured into moulds held no less than 30 tons.

The furnace itself is tilted over by an electric motor, while a man working a travelling crane guides a huge ladle underneath the furnace spout ready for the molten stream. This ladle has a valve at the bottom, and through this the metal is run into moulds, which form ingots weighing some 14 cwt. each.

Later on chunks are cut off these ingots and hammered out into slabs which eventually go through the hot-rolling mill, where they are squeezed out into bars, sheets, or strip. The latter has then to go through the cold-rolling mill, where it is passed through rollers under heavy pressure and reduced to the thickness required—and sometimes it's very thin indeed. This sort of work has to be done under scrupulously clean conditions, because if only a tiny piece of dirt got between the rollers and the strip metal it would make marks which would ruin that strip altogether. At Firth's this cleanliness is ensured by washing and filtering all the air before it is pumped into the shop under slight pressure, and all the machinery and the floor of the shop is regularly vacuum cleaned. Of course, all strip like this has to undergo the most searching inspection and tests before it is released for aircraft use, and for that matter for any other use.

A form of stainless steel which is now very widely known is "Staybrite," and this week everyone will have a chance of seeing it and its many uses at the Ideal Home Exhibition at Olympia in London. "Staybrite" is now used for every conceivable purpose in every-day life: sanitary fittings, shop fronts, cutlery, cooking utensils, tea services and all table utensils, table tops, furniture, for many parts of clocks like those electric ones of Smith's, cameras, for armoured plywood of the kind made by Flexo Plywood Industries, Ltd., and in fact everything which used to be made of metal as well as in many cases wood, can now be obtained in "Staybrite." When used for most household purposes it is highly polished and, being untarnishable, removes all the drudgery from house work. At Olympia, both in the Grand Hall and in the Gallery, most of the decorations are carried out in "Staybrite," making one of the most imposing and spectacular exhibits we have ever seen staged. Among the firms who show ranges of "Staybrite" articles are Guest, Keen & Nettlefold (screws) and Accles & Pollock (tubing).

## An Armstrong-Siddeley Appointment

LT. COL. L. F. R. FELL, D.S.O., O.B.E., M.I.Mech.E., F.R.Ae.S., has taken up the position of Chief Engineer (Aircraft Engines) with Messrs. Armstrong-Siddeley Motors, Ltd., Coventry.



IN THE DRILL HALL : Lord Trenchard declares the new Town H.Q. open. (FLIGHT Photo.)

## No. 604 (COUNTY OF MIDDLESEX) (BOMBER) SQUADRON

### Lord Trenchard Opens Town H.Q.

THE acquisition by No. 604 (County of Middlesex) (Bomber) Squadron, of Heath Brow House, Hampstead, as a Town Headquarters is somewhat of a triumph. For some long time past we have heard of difficulties raised by the local authorities, who apparently feared that the amenities of Hampstead Heath would be disturbed by the roar of "Jupiter" engines. Such objections have been overcome, and when the new headquarters were opened on Saturday, April 7, by Marshal of the Royal Air Force Lord Trenchard, it was stated that the L.C.C. had agreed to consider the H.Q. as part of the County of Middlesex. Heath Brow House itself is one of the beautiful old houses which still survive round the famous inn, Jack Straw's Castle, close to the Whitestone pond—one of the most splendid sites in Greater London. The spacious hall, in which the opening ceremony took place, covers the whole of the basement, and another good-sized room for engine instruction opens off it. Upstairs are the officers' anteroom and mess room, bar, etc., while from one window there is access to a flat roof which should give a magnificent view over Sandy Heath. On Saturday afternoon nothing much was to be seen except a very fair imitation of a November fog, but to compensate for this the band of the Middlesex Regiment emphasised the County connection by playing a lively programme of music.

The hall was full of guests when Lord Trenchard rose to declare the H.Q. open. He said that he had accepted the

invitation to perform this ceremony with pleasure for three reasons, first because he liked to think that he was not forgotten, secondly because he was always glad to do what he could for the old Air Force, and thirdly because he remembered an occasion when he had discussed the formation of the Auxiliary Air Force with the then Secretary of State for Air. The proposals had met with considerable criticism. Some people had said that such a technical affair as flying should be a full-time job. He thought that No. 604 Squadron was a complete answer to such forebodings. He thought that the Auxiliary Air Force ought to be increased in number of squadrons as a general support to the Royal Air Force. This squadron was raised in May, 1930, just after he had left the Air Ministry. Within a year it took part in the R.A.F. Display

at Hendon, and everyone had been impressed by the extraordinary efficiency of the A.A.F. A year later it won the Esher trophy, given to the most efficient A.A.F. squadron of the year. The squadron had been very lucky to get Wing Com. Dore as its first C.O. He paid a high tribute to the C.O., the adjutant (Flt. Lt. Fogarty, D.F.C.) and the permanent staff for the excellence of the instruction which they had given. Then he came to what he said was most important of all, the Auxiliary men and officers of the squadron, and he gave high praise to them for their hard work and their efficiency. "I firmly believe," went on Lord Trenchard, "that the British Air Force is and will remain second to none



Lord Trenchard inspects the Guard of Honour of No. 604 (County of Middlesex) (Bomber) Squadron. (FLIGHT Photo.)



in efficiency, skill, and—what I believe to be one of the greatest British characteristics—thoroughness." He said that counting of heads was indulged in to a great extent by a number of people. He had never been a great advocate of the counting of heads. He thought that as a knife could go through a lot of butter, so a really efficient squadron could go through a lot of indifferent material, provided that it was not too much outnumbered.

A vote of thanks was briefly proposed by Air Marshal Sir Robert Brooke-Popham, K.C.B., etc., and was seconded by the C.O. of the Squadron, Wing Com. A. S. W. Dore, D.S.O., T.D., who made a humorous little speech, saying



# THE ROYAL AIR FORCE

London Gazette, April 3, 1934.

## General Duties Branch

The following are granted short-service commns. as Acting Pilot Offrs. on probn. with effect from and with seny. of March 16—R. M. Atkin, E. R. Bitmead, J. B. Black, J. B. Brolly, R. J. B. Burns, D. O'C. Byng-Hall, D. E. Cattell, D. H. Clinch, R. C. Crawford, F. K. N. Cresswell, H. L. Dawson, C. J. S. Dickens, A. H. Donaldson, J. Duncan, C. A. H. Evans, P. Fleming, H. Georgeson, A. J. Guthrie, E. G. Hall, P. F. Handcock, J. D. C. Joslin, W. H. Kearney, J. H. Kitson, L. M. Laws, K. N. Lees, A. R. Leggate, W. C. A. Lodge, R. C. Meares, R. B. Middleton, B. G. Morris, A. D. Murray, R. J. C. Nedwill, D. J. North-Bomford, J. S. O'Brien, G. V. M. O'Reilly, G. S. A. Parnaby, G. I. Pawson, J. Pilling, L. H. Pomeroy, F. H. Roberts, L. W. Saben, P. H. R. Saunders, A. W. Simons, H. M. Starr, J. A. Sutherland, J. M. Thompson, J. E. Thornton, E. A. Verdon-Roe, R. N. J. White, R. G. D. Wight, I. S. Williams, H. de C. A. Woodhouse. Lt. Com. J. W. Hale, R.N., is re-attached to R.A.F. as Flt. Lt. with effect from March 22 and with seny. Jan. 1, 1933. P/O. J. R. A. Peel is promoted to rank of Flying Officer (Jan. 23).

The followg. promotions are made with effect from April 1:—  
*Flight Lieutenants to be Squadron Leaders:* E. T. Carpenter, A.F.C., C. Chapman, D.S.C., B. B. Caswell.

*Flying Officers to be Flight Lieutenants:* N. B. Norris, V. S. Bowling, J. N. T. Stephenson, A. E. Dark, H. J. Pringle, C. D. C. Boyce, R. J. O. Bartlett, B. M. Cary, H. C. Parker, J. S. Tanner, G. K. Horner, J. Cox.

Flt. Lt. P. Slocombe is placed on half-pay list, scale A, from March 14 to March 19, incl. Flt. Lt. G. L. Carter ceases to be seconded for duty with Iraq Govt. (March 1). Flt. Lt. J. Glover is placed on retired list (April 3); P/O. A. D. Ferguson is placed on retired list on account of ill-health (April 4). The followg. Flying Officers are transferred to Reserve, Class A (April 2):—S. J. H. Carr, D.F.C., H. M. B. Collins, A. C. Larnuth, H. B. Robertson. The followg. Flying Officers are transferred to Reserve, Class C:—E. C. Durbin (April 2); J. C. W. Staveley (April 3).

F/O. P. B. Lusk relinquishes his short service commn. on account of ill-health (April 2).

## Stores Branch

The followg. promotions are made with effect from April 1:—  
*Flying Officers to be Flight Lieutenants:* J. E. R. Sowman, W. A. D. Collingwood, M. S. Shapcott.

## ROYAL AIR FORCE INTELLIGENCE

**Appointments.**—The following appointments in the Royal Air Force are notified:—

### General Duties Branch

*Group Captain:* J. R. W. Smyth-Pigott, D.S.O., to Special Duty List, 15.3.34, on being seconded for duty with the Peruvian Government.

*Wing Commanders:* G. W. Murlis-Green, D.S.O., M.C., to H.Q., R.A.F., Halton, 20.3.34, for Administrative duties, vice G/Capt. L. D. D. McKean, O.B.E., F. E. P. Barrington, to Cambridge University Air Sqdn., Duxford, 3.4.34, for duty as Chief Instructor, vice W/Cdr. F. P. Don. V. S. Brown, to Air Ministry, Dept. of A.M.P. (D.D.M.), 3.4.34, for Personnel Staff duties, vice W/Cdr. F. E. P. Barrington. A. Gray, M.C., to No. 7 (B) Sqdn., Worthy Down, 2.4.34, to Command.

*Squadron Leader* P. C. Wood, to Marine Aircraft Experimental Estab., Felixstowe, 28.3.34, for Flying duties, vice W/Cdr. C. L. Scott, D.S.C.

*Flight Lieutenants:* P. Slocombe, to No. 10 (B) Sqdn., Boscombe Down, 20.3.34. W. C. P. Bullock, to Air Armament School, Eastchurch, 28.3.34. C. McM. Laing, M.C., A.F.C., to No. 58 (B) Sqdn., Worthy Down, 22.3.34. R. V. M. Odbert, to No. 15 (B) Sqdn., Martlesham Heath, 26.3.34.

## Royal Air Force. Changes in the Higher Commands

THE Air Ministry announces the following appointments:—

Air Commodore Christopher Lloyd Courtney, C.B., C.B.E., D.S.O., Director of Training, Air Ministry, to be Director of Staff Duties, Air Ministry.

Group Captain Arthur William Tedder, Commanding Officer, Air Armament School, Sheerness, to be Director of Training, Air Ministry, vice Air Commodore Christopher Lloyd Courtney, C.B., C.B.E., D.S.O. Press Section,

## The Admiralty Air Division

COMMANDER W. W. P. SHIRLEY-ROLLISON, promoted in the New Year list, joined the staff of the Naval Air Division at the Admiralty, on April 5, relieving Commander Malcolm Farquhar, who has been there two years. The new Navy Estimates provide for six officers in this Division in the present year, as compared with five last year, three commanders being allowed instead of two. There are two captains, one of whom serves as Director of the Division, and the remaining officer is a wing commander lent from the Royal Air Force.

that Lord Trenchard and the Squadron's Hon. Air Commodore, Sir Samuel Hoare, had been chiefly responsible for the formation of the squadron. He said that the squadron had begun with a very efficient adjutant and a dug-out as C.O. As a matter of fact, Wing Com. Dore won his D.S.O. for very gallant air work with No. 58 Squadron, R.A.F., during the war.

The guests were then conducted round the headquarters and were suitably entertained in the mess. The possession of such a fine H.Q. should have a very beneficial effect in maintaining the keenness and efficiency of a squadron which has already made an honourable name for itself.

## Medical Branch

Flt. Lt. H. R. Clein, M.B., B.Ch., is transferred to Reserve, Class D (ii) (March 31).

## ROYAL AIR FORCE RESERVE RESERVE OF AIR FORCE OFFICERS

### General Duties Branch

The followg. are granted commns. as Pilot Officers on probation in Class AA (ii) (March 19):—R. G. Allen, R. K. Beale, B. H. Boon, L. B. Greensted, D. M. Maw, J. G. Munro, H. D. Ripley, D. G. Simmons, A. K. L. Stephenson, J. F. Wells, R. G. Wilberforce. The followg. Pilot Officers on probation are confirmed in rank (March 20):—K. M. G. Anderson, D. W. F. Barker, R. D. Baughan, J. C. Boulter, B. S. Braithwaite, W. G. M. B. Broomhall, J. C. W. Buxton, R. F. Carnegie, A. B. Corle, F. A. Currey, F. E. R. Ducker, J. W. Franklin, K. V. Garside, W. H. A. Hibberd, G. R. M. Knox, G. A. P. Manwaring, J. A. Mertens, G. K. Murray, R. M. Pimm, G. F. Powell, C. F. H. Shepherd, J. C. Smyth, E. Rosslyn-Stuart.

F/O. J. B. L. H. Cordes (Capt., R.A.R.O.) is transferred from Class A to Class C (April 1). The followg. Flying Officers relinquish their commns. on completion of service (March 31):—M. Brunton, F. W. Field. F/O. E. V. H. Jarvis relinquishes his commn. on completion of service and is permitted to retain his rank (March 25). The followg. Flying Officers relinquish their commns. on appointment to short-service commns. in the R.A.F. (March 16):—C. A. H. Evans, P. H. R. Saunders.

## AUXILIARY AIR FORCE

### General Duties Branch

No. 600 (CITY OF LONDON) (BOMBER) SQUADRON.—The followg. are granted commns. as Pilot Officers:—R. P. Braun (March 19); R. G. Kellett (March 20).

No. 603 (CITY OF EDINBURGH) (BOMBER) SQUADRON.—Sqd. Ldr. H. R. Murray-Phillips, M.P., resigns his commn. on relinquishing command of the Squadron (April 1); Flt. Lt. Lord George Nigel Douglas-Hamilton to be Sqd. Ldr. and to command the Squadron (April 1).

*Flying Officers:* J. K. Brew, to No. 5 Flying Training School, Sealand, 21.3.34. G. E. Watt, to No. 18 (B) Sqdn., Upper Heyford, 19.3.34. W. I. H. Burke, to R.A.F. College, Cranwell, 22.3.34. J. R. Scarlett, to Station H.Q., Donibristle, 26.3.34.

*Pilot Officers:* The following Pilot Officers are Posted to No. 5 Flying Training School, Sealand, on 17.3.34, on appointments to Permanent Commns.:—R. E. G. Brittain, D. N. Kington-Blair-Oliphant, F. A. Paynter, J. A. Robinson, P. B. Wood.

### Stores Branch

*Flight Lieutenants:* P. H. Burt, to No. 3 Stores Depot, Milton, 2.4.34. C. Hanson-Abbott, to H.Q., Palestine and Transjordan, Jerusalem, 16.3.34.

### Medical Branch

*Squadron Leader* V. R. Smith, to Station H.Q., Netheravon, 25.3.34 for duty as Med. Officer.

*Flight Lieutenants:* F. H. Peterson, to No. 47 (B) Sqdn., Khartum, Egypt, 17.2.34. O. S. M. Williams, to Station H.Q., Heliopolis, 2.3.34.

## Gordon Shephard Memorial Prize Essay Awards

THE awards in the 1933 competition for the Gordon Shephard Memorial Prizes are shown below. The competition is open to all members of the Royal Air Force for essays on reconnaissance and kindred subjects. The Memorial Essay Prizes were established by Sir Horatio Hall Shephard, in memory of his son, the late Brigadier-General G. S. Shephard, D.S.O., M.C., R.A.F.

*1st Prize.*—Flight Lieutenant E. J. Kingston-McCloughry, D.S.O., D.F.C., p.s.a., Royal Air Force Depot (on Course at Staff College, Camberley).

*2nd Prize.*—Wing Commander G. C. Pirie, M.C., D.F.C., p.s.a., Station Headquarters, Tangmere.

*3rd Prize.*—Wing Commander R. H. M. S. Saundby, M.C., D.F.C., A.F.C., p.s.a., Staff College, Andover.

## Air Force List

THE April issue of the Air Force List has now been published. It can be purchased (price 2s. 6d.) from H.M. Stationery Office at the following addresses:—Adastral House, Kingsway, London, W.C.2; 120, George Street, Edinburgh; 2, York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; 15, Donegall Square, Belfast; or through any bookseller.

# Briefly.

MR. S. A. THORN, who is representing Henly's, the A. V. Roe agents in the North, has moved his headquarters from Woodford to the Manchester Airport at Barton. He will also continue to operate on charter work for Birkett Air Services, Ltd.

THE first of the production Short "Scion" aeroplanes is nearing completion. It will be powered with the latest Pobjoy engines of the "Niagara" type.

OPERATORS who have had extensive experience of internal air line operation estimate that they cannot afford to pay more than £450 per passenger seat for fast aeroplanes.

SIR ALAN COBHAM is continuing with his refuelling experiments in the air, and will be giving a demonstration before Air Ministry officials this week. He is not yet satisfied that he has reached sufficient advancement to attempt the flight to Australia, which was reported to be his object last year, but nevertheless great advance in technique has been made. The Airspeed "Courier" has proved itself an admirable machine to handle under the refuelling conditions.

LIVERPOOL CORPORATION have voted a further £60,000 for the development of Speke Aerodrome. The aerodrome manager, Capt. H. J. Andrews, will shortly spend some time at Croydon studying air traffic control before proceeding to Schiphol Aerodrome, Amsterdam, for a similar purpose.

At Liverpool, last Friday, the Prime Minister admitted that religious bodies had passed votes of censure on him because he flew!

RECENT additions to the Board of Provincial Airways, Ltd., include Air Com. P. F. M. Fellows and Sqd. Ldr. D. Gilley.

ALTHOUGH already an air line terminal, Glasgow has no airport. They have left it to Renfrew to provide one for them. Wake up, Glasgow.

THE windows of the new Avro 642 are all made so that they can be pushed outwards and used as exits in the case of emergency.

FROM Thursday, April 12, Midland & Scottish Air Ferries are assisting in an aviation display in Glasgow in connection with the local Boy Scout movement.

THE Model Transport Company, under the management of Miss Rosalind Norman, have received an order from Imperial Airways for one hundred models of the Armstrong Whitworth "Atalanta" monoplane which they use on the African air route.

MR. FRED HAIG, aviation representative of the Vacuum Oil Company of Australia, who is visiting this part of the world, has left England for a visit to the Continent. He is flying the "Dragon" belonging to the Vacuum Oil Company of Great Britain, Ltd.

MOBILE radio direction finding and weather broadcast stations are likely to be used by the Air Ministry to assist operators of England's internal air line. Recent tests have proved very satisfactory.

AN aerodrome is reported to be in the process of being developed between Portsmouth and Southampton. It will form part of a housing estate which has over two miles' frontage on the Solent.

MISS DRINKWATER—who, we believe, is Scotch, despite the name—is the youngest "B" licensed woman pilot. She is employed by Midland & Scottish Air Ferries, Ltd., at Renfrew, and is only 20 years of age.

MR. H. M. BARKER, who for the past 22 years has been in the service of the Vacuum Oil Company, has been appointed to the board of the company.

MRS. G. A. PENNINGTON, whose husband lost his life so tragically when flying from Doncaster last year, has now opened "The Guest House" at 81, Sackville Road, Hove, Sussex, where those who wish to take fresh sea air will be made most comfortable.



FOR FUEL AND OIL SERVICE: Mr. J. Taylor, a pilot and a member of the aviation staff of Shell-Mex & B.P., Ltd., standing beside one of the company's aeroplanes, a D.H. "Leopard Moth" ("Gipsy Major"). (FLIGHT Photo.)

AN exhibition of aircraft radio equipment was held by the Plessey Co., Ltd., at the Piccadilly Hotel, London, W., on March 27 and 28.

G-ACNZ is the registration of an Airspeed "Courier" which has been bought by D. Napier & Sons, Ltd. This machine will be powered with the Napier "Rapier" engine (see FLIGHT for January 11, 1934), and AVM. A. E. Borton, a director of the Napier company, may, it is understood, fly this machine in the King's Cup Race in July.

OVER 25 C.30 type Autogiros have been sold since the beginning of January.

THE Hon. A. E. Guinness has purchased two Autogiros. One from the Pitcairn company in America, a cabin job, and the other a C.30 type from A. V. Roe, Ltd., of Manchester.

MR. JOHN SWORD, managing director of Midland Scottish Air Ferries, Ltd., has placed an order with A. V. Roe, Ltd., for a C.30 type Autogiro for his own use.

## PUBLICATIONS RECEIVED

*The Royal Air Force: A Concise History.* By Captain A. O. Pollard, V.C., M.C., D.C.M. London: Hutchinson and Co. (Publishers), Ltd. Price 18s. net.  
*Who's Who in British Aviation.* 1934 Edition. Edited by W. Lockwood Marsh and M. Glen Sedorski. London: Bunhill Publications, Ltd. Price 6s.  
*Direct Services London to the Continent by Air.* Spring Season, 1934, March 1 to April 30 (inc.). Aircraft & General Finance Corporation, Ltd., Bush House, Aldwych, London, W.C.2.  
*La Croisière Aérienne de l'Escadre Vuillemin Racontée par l'Image.* La Société Générale Aéronautique Moteurs Lorraine, 11, rue de Tilsitt, Paris.  
*Leakey's Introduction to Esperanto.* 1934. The British Esperanto Association, Inc., 142, High Holborn, London, W.C.1. Price 4d.

## NEW COMPANIES REGISTERED

GEOLOGICAL AIR SURVEYS, LTD.—Capital, £5 in 100 shares of 1s. each. Under agreement with H. Hemming & Partners, Ltd., to endeavour to secure and carry out contracts in any part of the world for air and ground surveys for the purposes of prospecting, examining and exploring any country, etc., to undertake the management, operation or agency work of air lines, and the carrying of passengers, freight, specie and mails by air, land or water. Directors: Harold Hemming, 87, Belsize Lane, N.W.3, aeronautical engineer. (chairman); James Horsfall, 43, Fitzjames Avenue, W.14, engineer; Miles H. King, Shandon, Pembroke Road, Moor Park, Northwood, Middx., engineer; Mr. King signs the memorandum of association for 26 shares, and the other two sign for one each. Solicitors: Dod, Longstaffe & Fenwick, 16, Berners Street, W.1.

AERO RESEARCH, LTD.—Capital, £100 in £1 shares. Designers, builders and proprietors, agents for the hire, sale and purchase of and dealers in aeroplanes, airships, seaplanes, motor boats, etc. Director: N. A. de Bruyne, Fellow of Trinity College, Cambridge.

## INCREASE OF CAPITAL

SOUTHEAST-ON-SEA FLYING SERVICES, LTD. (The Aerodrome, Rochford, Essex). The nominal capital has been increased by the addition of £500 in £1 ordinary shares beyond the registered capital of £1,000.

## PATENT AERONAUTICAL SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motors (The numbers in brackets are those under which the Specification will be printed and abridged, etc.)

### APPLIED FOR IN 1932

Published April 12, 1934

- 25,919. VICKERS (AVIATION), LTD. R. K. PIERSON and T. S. DUNCAN. Braking systems for aircraft. (407,392.)
- 32,292. GENERAL ELECTRIC CO., LTD., and L. W. BARSDORF. Electric lighting fittings for aerodrome lighting. (407,459.)

### APPLIED FOR IN 1933

Published April 12, 1934

- 7,340. G. FERLAY. Radiators for aircraft engines. (407,530.)
- 16,813. F. HEPWORTH. Tubular oil coolers for aero engines. (407,577.)